VIDE-V30561

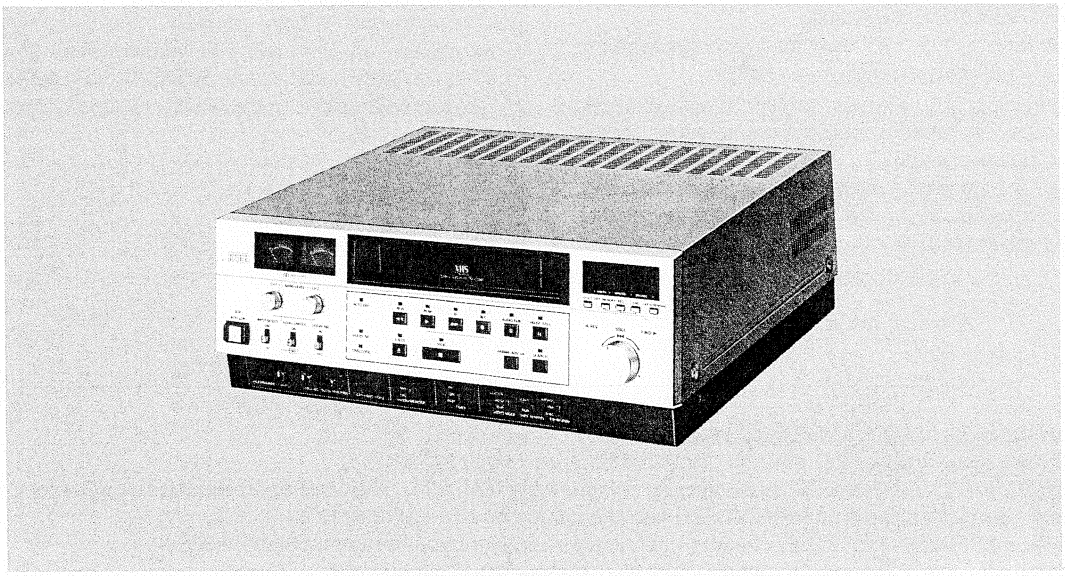
Operating Instructions

VHS

PAL NTSC4.43

Video Cassette Recorder

AG-6200



Panasonic/National

Before attempting to connect, operate or adjust this product, please read these instructions completely.

VQT1225-2

For Your Safety

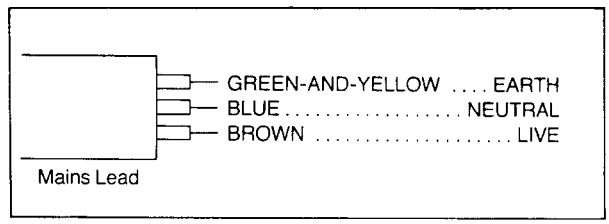
DO NOT REMOVE PANEL COVER.
To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

1. **THIS APPARATUS MUST BE EARTHED.**
   To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.
   Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.
   The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

2. **DO NOT REMOVE PANEL COVER BY UNSCREWING.**
   To prevent electric shock, do not remove cover. No user serviceable parts inside. And do not insert figures or any other objects into the video cassette holder.

3. **VOLTAGE SELECTOR SETTING.**
   The power cord of this unit must be disconnected from mains before the voltage selector is changed.
   Before connecting to the power supply, ensure that the selector on the rear panel is selected to the same voltage as your local power supply.
   The voltage selector can be adjusted, if necessary, by using a screwdriver, but this adjustment must be made after disconnecting the power cord.

■ **AC POWER CORD CONNECTION. (AG-6200 U.K. only)**
The wires in the mains lead for this apparatus are coloured in accordance with the following code.



As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

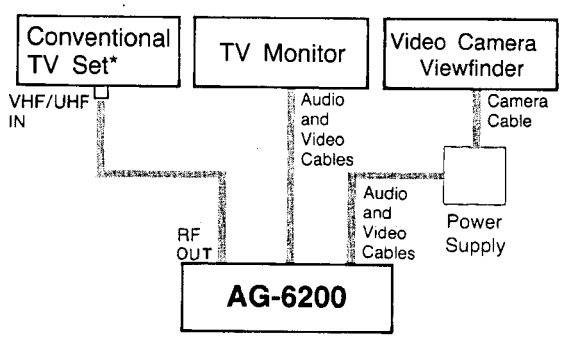
Remark:
This apparatus was produced to BS 800:1983.
Dieses Modell entspricht der EG-Vorschrift (für Funkstörungsschutz) 82/499/EG.
La Société PANASONIC-FRANCE, importateur du matériel MATSUSHITA-JAPON déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. modifiée par la directive 82/499/C.E.E.
Dit model is onderworpen aan de EEG-richtlijn (ter voorkoming van radio-interferentie) 82/499/EEG.
Denne model opfylder EF direktiv 82/499/EF (for forebyggelse af radiointerferens).
La Società PANASONIC ITALIA S.p.A., importatrice di questo prodotto, dichiara che questo apparecchio è conforme alle disposizioni della direttiva C.E.E./82/499 (D.M. 10 aprila 1984).

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

AG-6200
VTR Systems

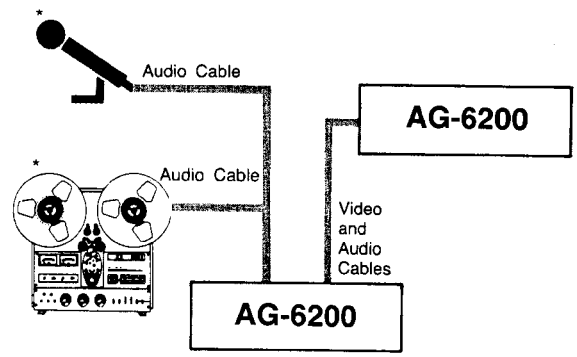
IMPORTANT
"Unauthorized recording of copyrighted television programmes, films, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

Recording/Playback (See pages 11~17)

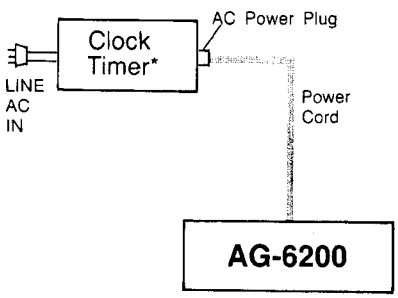


*For playback only

Dubbing (See pages 27~28)

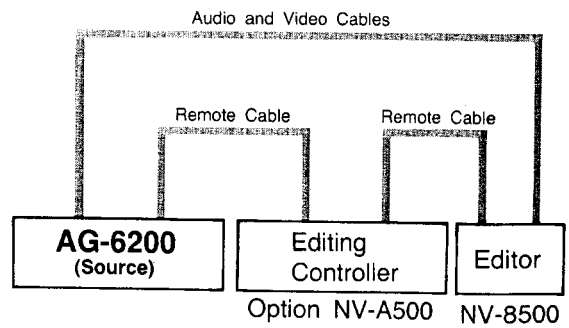


*Audio Dubbing



*ON/OFF Timer

Timer Recording/Playback (See pages 24~26)



Editing (Basic) (See page 34)

For playing back, use the 3-hours (SP mode) recorded tape in this unit.

Features

1. **Recording and playback possible with PAL, and playback possible with NTSC 4.43 MHz systems**

   This unit is designed to record and playback with PAL, and also playback NTSC-recorded tape by using the TV monitor for NTSC 4.43 MHz colour system.

2. **Front Loading System**

   This new design allows you to insert the video cassette into the front of the VTR, minimizing space requirements needed for example in tape duplication racks.
   When a cassette is in the VTR, the cassette-in indicator "[oo]" appears on the counter display.

3. **Interim Loading System**

   The incorporation of the interim loading system makes it possible to read out control signals during tape rewind or fast forward modes.

4. **Remaining Tape Indicator**

   During recording or playback, the remaining time is indicated on the counter display. A remaining tape display is included with the tape counter, making it easy to see how much tape remains during recording or playback. Also, when the remaining tape is five minutes or less, the [oo] display flashes, letting you know that the end of the tape is near. Once the remaining tape display is set, the remaining tape is indicated in the FF and REW modes also.

5. **14 Step Searching Function**

   There are 14 speeds available for locating the desired scene segment in playback.

[Forward direction] ×10, ×6, ×2, ×1, ½×, ⅕×, 1/10×, 1/25×
[Still] Still image
[Reverse direction] ×10, ×6, ×2, ×1, ½×

6. **Repeated Playback**

   This unit is able to repeatedly playback any tape segment.

7. **EBU Time Code Recording and Playback**

   EBU time code signal can be recorded and played back on audio CH 2 of the tape.

8. **Automatic Rewind**

   When the tape reaches its end, the tape will be automatically rewound to its beginning (except during the timer record).

9. **Dual Audio Channel Dolby* NR System**

   Stereo or bilingual programmes can be recorded and played back since there are two audio tracks. The sound quality is improved due to the built-in Dolby NR System.

10. **Dubbing**

    With after recording device which is most convenient, if you wish to dub audio onto audio CH2 track of the tape which is already recorded.

11. **Built-in Audio Limiter Circuit**

    An audio limiter circuit is incorporated which enables transient, too loud audio to be recorded without any distortion.

12. **19" Rack Equivalent**

    It is possible to mount the unit into a standard EIA 19 inch rack.

13. **System Connection**

    This unit can be used as a source unit in a system incorporating NV-8500 editing machine and editing controller NV-A500. The unit is thus upward compatible.

14. **Optional accessory**

    With the optional RF converter, the output of the recorder can be viewed on any conventional TV set.

■ **Other features**

- Record start/stop remote control
- Mode lock function
- Compulsory switching of colour mode
- Directly visible tape mechanism by means of mirror
- By connecting a phono plug to one channel of the audio (line) input, automatic two-channel monaural recording can be performed.

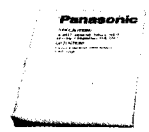
*'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Inspection

CAUTION:
TO PREVENT FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

Standard Accessories

After removing the unit from its box, check to be sure it has not sustained any damage. Also check to see that you have the following accessory as pictured below.

Dust Cover		Part No.	
	For AG-6200-E or AG-6200-B	VFB0048	1 pc.
	For AG-6200-EN or AG-6200-A	VFB0049	1 pc.

Optional Accessories

ENC17572
(For AG-6200-B, U.K.)

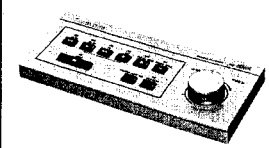
ENC17571
(For AG-6200-E)

ENC17506
(For AG-6200-EN)

RF Converter

Editing Controller
NV-A500

Remote Search
Controller NV-A505



Remote Controller
AG-A600

Regarding Rack Mounting:
Use optional Rack-mounting Frame AG-M600.
When mounting the VTR in a rack, be sure to install a fan for heat dissipation on the rack before using.
For details, please consult your service personnel.

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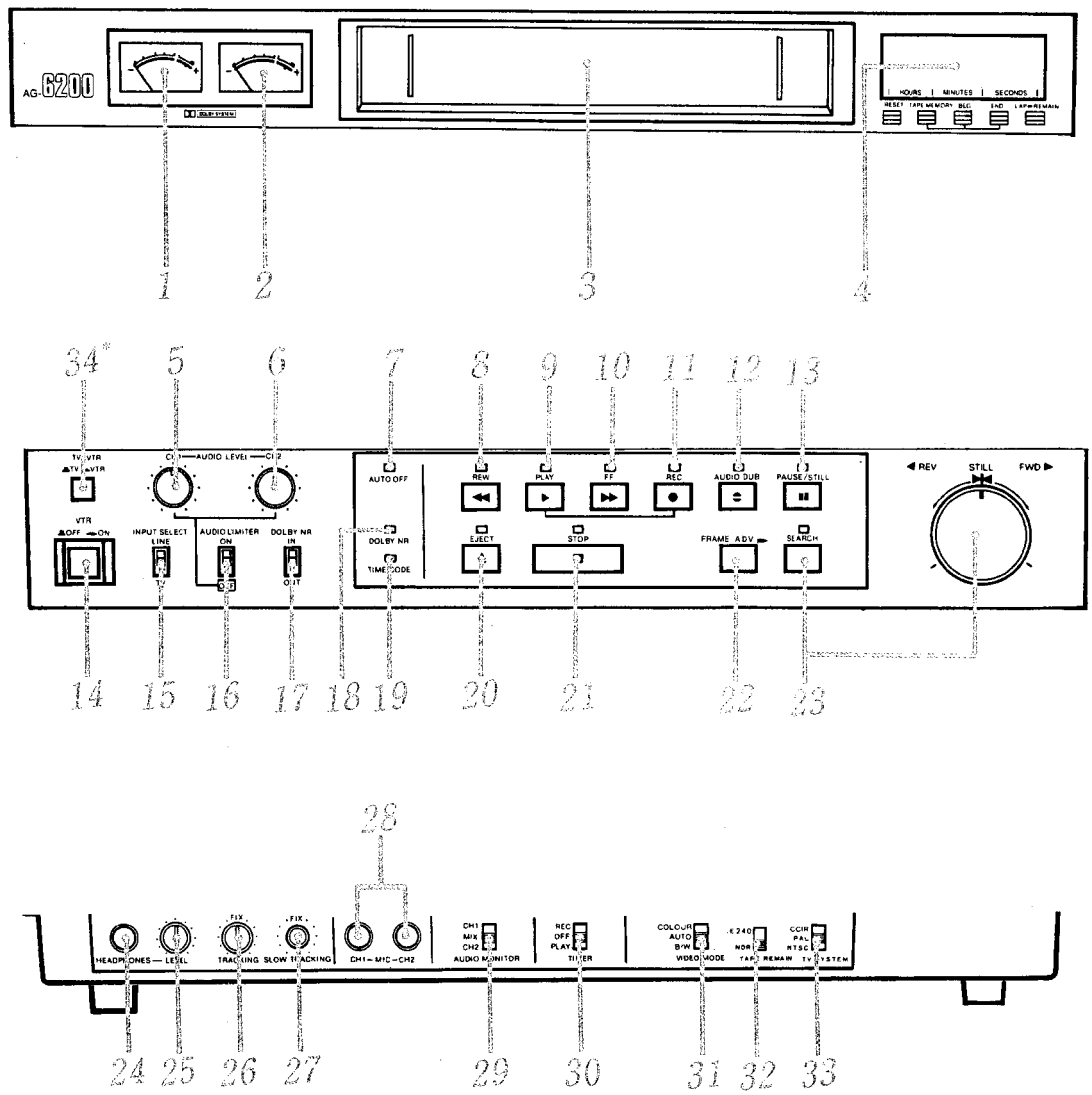
Controls and Components

Front Panel



***Note:**
TV/VTR Selector (34) is only for AG-6200-EN or AG-6200-A models.

⑪ Audio CH 1 Recording Level Meter

Level meter for audio CH 1 recording. Monitors audio CH 1 recording level which may be changed by adjusting the level control ⑫ so that the level meter needle rarely deflects beyond the 0 dB position.

⑫ Audio CH 2 Recording Level/Time Code Meter

Level meter for audio CH 2 recording or time code.

1) **When the Audio CH 2 Selector on the rear panel is set to the AUDIO position**.....
   Monitors audio CH 2 recording level which may be changed by adjusting the level control ⑫ so that the level meter needle rarely deflects beyond the 0 dB position.
2) **When the Audio CH 2 Selector on the rear panel is set to the TIME CODE position**.....
   Shows whether the time code signal is present or absent. When the time code signal is present, the meter should read 0 dB position.

⑬ Cassette Holder

For insertion of a video cassette.

⑭ Tape Counter

- [oo]: indicates that the cassette is in the cassette holder.
- ▬: indicates the minus counter position "−*:**:**" when the tape is rewound beyond the reset (0:00:00) position.
- -000: indicates the counter (0:00:00) search mode by pressing the Rewind or Fast Forward Button.
- ⮌: indicates the one-time repeated playback mode.
- ⮌: indicates the random repeated playback mode.
- **BEG:** indicates the programme start position which is to be repeated.
- **END:** indicates the programme end position which is to be repeated.
- **LAP:** indicates the tape position from the reset point.
- **REMAIN:** indicates remaining tape time.
- **RESET Button:** For setting the tape counter to "0:00:00".
- **TAPE MEMORY Button:** For selection in either automatic tape stop when the counter reaches "0:00:00" in the rewind, fast forward, or the repeated playback modes.

  Tape Memory can be activated in this sequence:
  1st push: -000
  2nd push: ⮌
  3rd push: ⮌
  4th push: memory off

- **BEG Button:** For selection of the programme start position which is to be repeated.
- **END Button:** For selection of the programme end position which is to be repeated.

LAP ↔ REMAIN Button: For selection of either the lap time (normal tape position from reset point) or the remaining tape time.

⑮ Audio (CH 1) Level Control/Meter [AUDIO LEVEL-CH 1]

Controls audio CH 1 recording level. Should adjusted so that the Level Meter needle rarely deflects beyond the 0 dB position.

⑯ Audio (CH 2) Level Control/Meter [AUDIO LEVEL-CH 2]

Controls audio CH 2 recording level. Should be adjusted so that the Level Meter needle rarely deflects beyond the 0 dB position.

⑰ Auto OFF Lamp [AUTO OFF]

This lamp lights when condensation has formed inside the unit, which cause the unit to cease operating. The cassette tape will be ejected automatically. It flashes when something is wrong with the tape transport (such as tape slack). The unit does not operate when this lamp is either lit or flashing. For details, refer to "Auto OFF Lamp" on page 37.

⑱ Rewind Button/Lamp [REW]

When this button is pressed, the cassette tape is rewound to the supply reel.

⑲ Play Button/Lamp [PLAY]

Pressing this button causes the tape to start playback. If Record Button ⑳ is held down first, and then this button is pressed, the unit will go into the recording mode.

⑳ Fast Forward Button/Lamp [FF]

When this button is pressed, the tape is wound rapidly onto the takeup reel.

㉑ Record Button/Lamp [REC]

This button should be pressed simultaneously with the Play Button to start recording both video and audio.

㉒ Audio Dubbing Button/Lamp [AUDIO DUB]

During playback, audio dub may be started by pressing Play ⑲ and Audio Dub Buttons at the same time.

㉓ Pause/Still Button/Samp [PAUSE/STILL]

Press this button to pause the tape movement in either the record or playback modes. The Pause/Still lamp will light. A still picture will appear in the playback mode. The tape starts traveling again when the Pause/Still Button during recording (or Play Button during playback) is depressed.

㉔ VTR Switch/Lamp [VTR]

DC Power is supplied to the unit when this switch is activated. The audio CH 1 and CH 2 meter lamps light. The tape counter illuminates, and the tape is set to intermediate loading position. When the switch is pushed again, the DC power to the circuit is switched OFF (**Note:** Unit is in STAND BY mode because power supply circuit is still ON).

- Aven om denna omkopplare är i "OFF"-läge, har fortfarande en del av apparaten nätspänning.
- Selv om denne omskifter er i "OFF" stilling, tilføres en del af apparatet stadig strøm.

Input Signal Selector [INPUT SELECT]

- **TV:** To record from the TV monitor connected to the TV Monitor Socket.
- **LINE:** To record from the video camera or video signal connected to the Video Input Socket.

Audio Limiter Selector [AUDIO LIMITER]

- **ON:** During recording, minimizes distortion at peak levels.
- **OFF:** Peak levels are not limited.

⑰ Dolby NR Switch [DOLBY NR]
When the Dolby NR Switch is set to the "IN" position, Dolby NR System is activated.

⑱ Dolby NR Lamp
When the Dolby NR Switch is in the "IN" position, this lamp is illuminated and the Dolby Noise-Reduction System is enabled.

⑲ Time Code Lamp [TIME CODE]
When the Audio CH 2 Selector Switch is set to TIME CODE, this lamp lights.

⑳ Eject Button/Lamp [EJECT]
To remove a cassette, press this button.
If this button is pressed while the tape is moving, (during playback, fast forward or rewind) the unit will stop and then eject the cassette tape.

㉑ Stop Button/Lamp [STOP]
Used to stop the tape movement.

㉒ Frame Advance Button
To advance a still picture by one frame.

㉓ Search Button/Lamp/Dial
After Search Button is pressed, use the dial to adjust the search speed for forward playback between 0 and 10 times the normal playback speed, for reverse playback between ½ and 10 times the normal playback speed.

㉔ Headphones Socket [HEADPHONES]
Permits listening with headphones to a channel or channels selected by the Audio Monitor Output Channel Selector ㉙

㉕ Headphones Level Control [HEADPHONES-LEVEL]
This volume controls the headphones level.

㉖ Tracking Control [TRACKING]
Normally leave this control in its centre "FIX" detent position. Occasionally tapes made on other video cassette recorders may exhibit noise or streaks during the normal playback.
Turn the Tracking Control slowly in either direction to shift the playback scanning of the tape.

㉗ Slow Tracking Control [SLOW TRACKING]
For use with slow motion playback.
Normally leave this control in its centre "FIX" detent position.

㉘ Microphone Sockets CH 1 & CH 2 [MIC]
These are for connecting external microphones.

㉙ Audio Monitor Output Channel Selector [AUDIO MONITOR]
Selects the audio channel which is to be heard on the TV monitor, headphones, through Audio Monitor Output Socket, or RF Output Socket.
CH 1: To monitor audio CH 1 only.
MIX: To monitor mixed CH 1 and CH 2 audio.
CH 2: To monitor audio CH 2 only.

㉚ Timer Selector [TIMER]
REC: For recording with the timer, see pages 24~26.
OFF: Normally set to this position.
PLAY: For playback with the timer, see pages 24~26.

㉛ Video Mode Selector [VIDEO MODE]
Used to avoid mistaken operation with the colour/black & white automatic selector circuit.
AUTO: Distinguishes automatically between Black & White and colour video input signals or playback video signals.
COLOUR: When the colour signal is weak, S/N ratio is insufficient, etc., and the automatic selector circuit does not operate properly, the unit is placed forcibly on "COLOUR".
B/W: When the S/N ratio of the black & white signal is insufficient, causing mistaken operations of the automatic selector circuit, place on "B/W".

Notes:
- If colour signals are played back on the black & white mode, or vice versa, the picture quality will deteriorate.
- When recording and playback of Black & While programme in PAL/CCIR, place the video mode selector to B/W.

㉜ Tape Remaining Selector [TAPE REMAIN]
Matches time countdown circuits to the type of tape used.
E240: For use with the NV-E240 tape.
NOR: For use with the NV-E180, E120, E90, E60, E30 tape.

㉝ TV System Selector [TV SYSTEM]
This set offers PAL/CCIR/NTSC operations.
PAL: recording and playback of PAL colour signal,
NTSC: playback of modified NTSC 4.43 MHz colour signal,
CCIR: recording and playback of SECAM* colour signal.

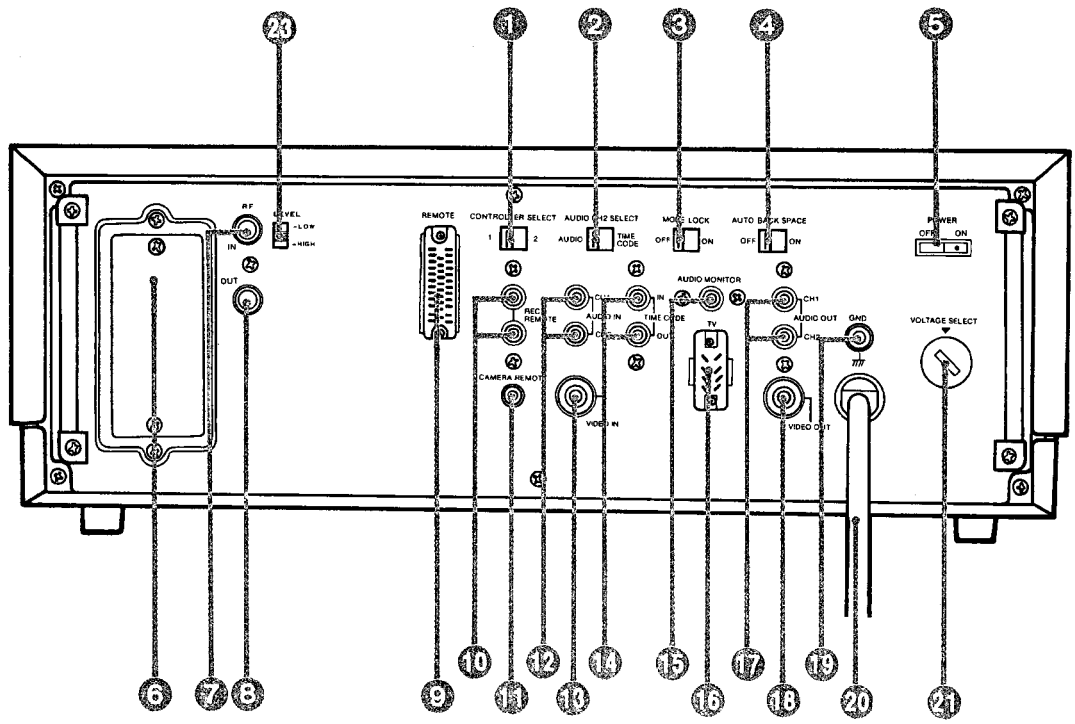
***FOR SECAM CAUTIONS:**
1) In some areas, SECAM colour broadcasts can be recorded on this set, but such cassettes are not interchangeable with cassettes recorded on other PAL-VHS or FRENCH SECAM-VHS sets.
2) When cassettes recorded on this set are played back on the FRENCH SECAM-VHS set, the playback is in black and white. Also, cassettes recorded on the FRENCH SECAM-VHS set, or FRENCH SECAM prerecorded cassettes may be played back in black and white on this set.

For AG-6200-EN or AG-6200-A models.

㉞ TV/VTR Selector [TV/VTR]
Selects the signal to be viewed on TV.
VTR: For playback of the recorded tape or monitoring of recording.
TV: For normal TV viewing.

Connectors

Rear Panel



⑪ Controller Selector Switch [CONTROLLER SELECT]

Use this switch to match command electronics to the type of Controller used.

1: Set the switch to this position when using Remote Controller AG-A600, Editing Controller NV-A500 or Remote Search Controller NV-A505.

2: Set the switch to this position when using Remote Controller NV-A800A or Auto Search Controller NV-A850A, or Editing Controller NV-A960.

⑫ Audio CH 2 Selector [AUDIO CH 2 SELECT]

This is the selection switch for audio CH 2 or time code signal.

TIME CODE: When using the time code signal.
AUDIO: When using audio signal.

⑬ Mode Lock Switch [MODE LOCK]

When "ON", inhibits function buttons. See page 31.

⑭ Auto Back Space Switch [AUTO BACK SPACE]

When "ON", the automatic back space function is enabled.
Normally, leave the switch in the "ON" position.
For details, refer to page 32.

⑮ Power Off/On Switch [POWER]

Setting this switch to the "OFF" position removes all applied power from the unit.
Note that the front panel VTR Switch is used to turn the unit ON or OFF during normal use.
Set the switch to the "OFF" position when this unit is not used for a long time.

⑥ RF Converter Slot
See page 14.

⑦ RF Input Socket [RF IN]
For connection with the external aerial.

⑧ RF Output Socket [RF OUT]
This connects to the antenna terminal (COAXIAL type) of a conventional TV receiver.

⑨ Remote Control Socket [REMOTE]
For connection of optional remote controller. Refer to page 34.

⑩ Record Remote Socket [REC REMOTE]
Used for remote control and connect to the ON/OFF remote control unit or the Record Remote Socket of another AG-6200. See page 35.

⑪ Camera Remote Control Socket [CAMERA REMOTE]
Connect the video camera's pause remote control cable to this socket.

⑫ Audio Input Sockets CH1 & CH 2 [AUDIO IN]
This is the socket for accepting an audio input signal from a line source (audio tape recorder, radio or record player).

⑬ Video Input Socket [VIDEO IN]
For connection of an external video source, such as a video camera or another video recorder.

⑭ Time Code Sockets [TIME CODE]
Use these sockets to record or read out the time code signal.
IN: Input for Time Code recording.
OUT: Output for Time Code playback.

⑮ Audio Monitor Output Socket [AUDIO MONITOR]
For connection to audio amplifier, or audio input of a TV monitor. This allows monitoring of CH 1 or CH 2 or mixed audio, as selected by the Audio Monitor Output Channel Selector.

⑯ TV Monitor Socket [TV]
For connection of a TV monitor (having an 8-pin connector) by using the TV/VTR monitor connection cable.
In case of audio recording: CH1 is recorded. In case of audio playback: Selected channel by Audio Monitor Output Channel Selector is played back.

⑰ Audio Output Sockets CH 1 & CH 2 [AUDIO OUT]
Audio signal line output.

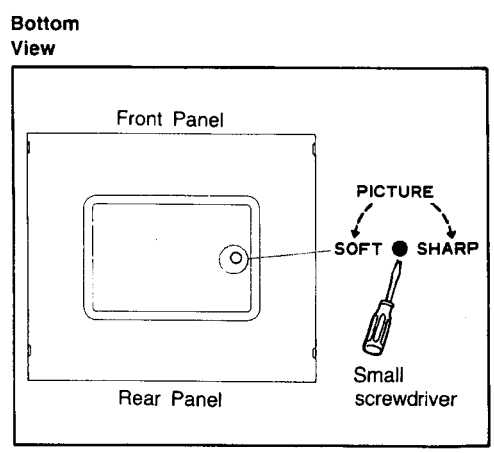
⑱ Video Output Socket [VIDEO OUT]
This provides video output signal for use with a TV Monitor, another video recorder, or a time base corrector.

⑲ Ground Terminal [GND]
Connect to external ground, if audio hum or buzz is heard while monitoring or playing back.

⑳ AC Power Cord
For connection to an AC electric outlet.

㉑ Voltage Selector [VOLTAGE SELECT]
This selector can be set for 110, 120, 220, 240 Volt operation.
If it is necessary to change the voltage, consult page 1.

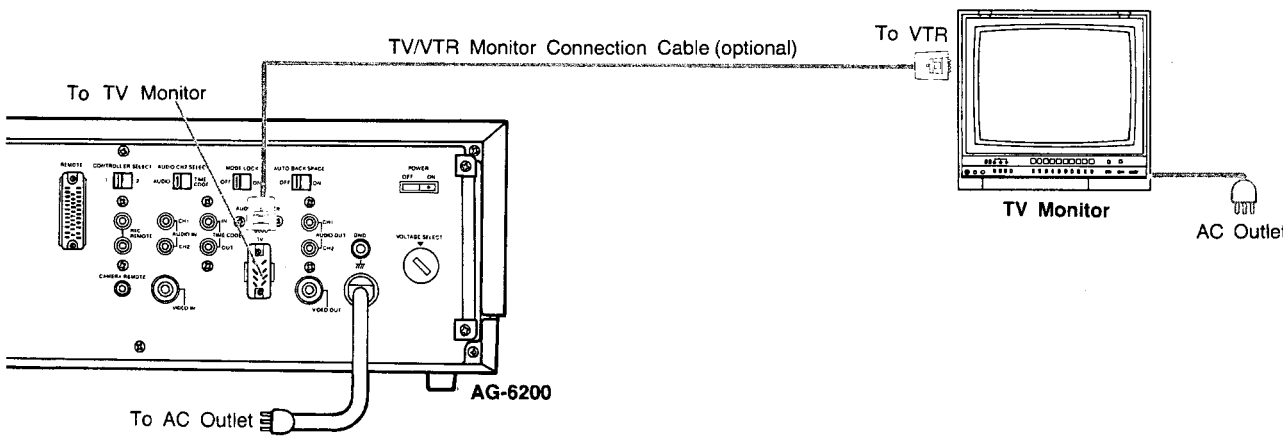
㉒ Picture Sharpness Control [PICTURE]
Control the playback picture so that its outlines are made sharper or softer. It has no effect on recording.



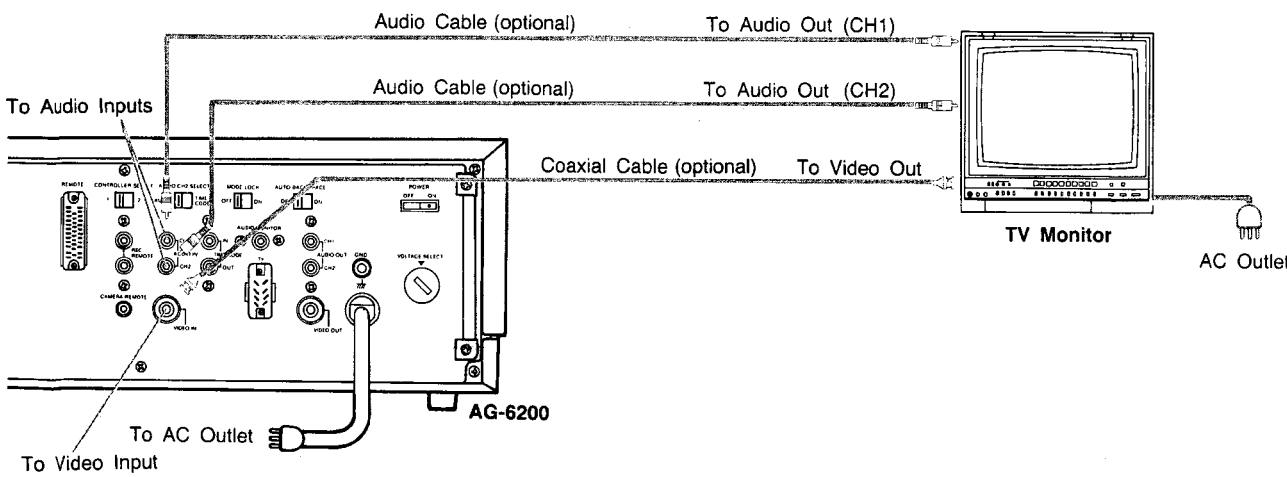
RF Signal Level Switch [LEVEL]
㉓Used to attenuate the reception of the antenna signals. If the reception is normal, set to "HIGH". If the signal is strong (the stripped pattern appears at the top of the picture on TV), set to "LOW".

Recording

Using a TV Monitor and a TV/VTR Monitor Connection Cable (8-pin)

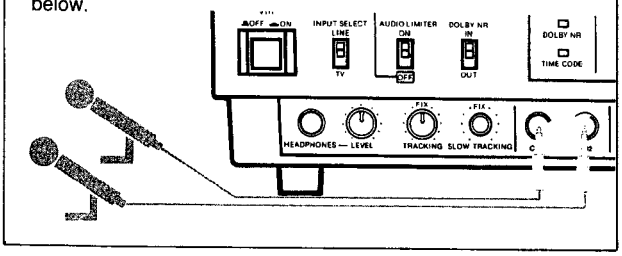


Using a TV Monitor and Audio/Video Cables



When connecting microphones (optional)

Connect an external microphone to the MIC Socket.
When adjusting the levels, follow the Audio Level Adjustment below.



When recording from a TV Monitor

When recording from a TV Monitor by using a TV/VTR Monitor Connection Cable (8-pin), the audio is recorded on channel 1 only. Therefore, only Audio CH 1 Recording Level Control needs to be adjusted.

Switch Settings

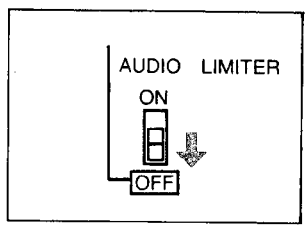
- Turn TV Monitor ON.
- Turn VTR ON.
- Select the TV System Selector to the desired position.
- Set the Input Signal Selector to LINE or TV depending on source.

When connecting through a TV/VTR Monitor Connection Cable	**When connecting through a video/audio cables**
Set the Input Signal Selector to TV. INPUT SELECT LINE TV	Set the Input Signal Selector to LINE. INPUT SELECT LINE TV

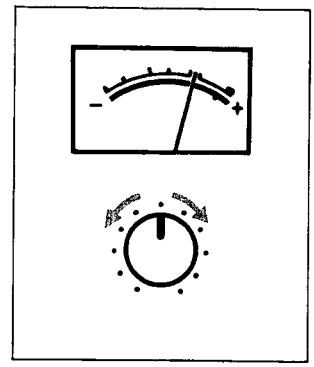
- Set the Timer Selector to OFF.
- Insert a cassette tape. Make sure that the tab is in place.

Audio Level Adjustment

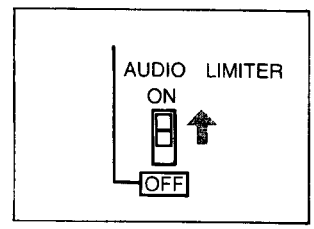
1) Set the Audio Limiter OFF.



2) Adjust the recording level so that the Audio Level Meter needle rarely deflects beyond 0 dB using the Audio Level Control.



3) Set the Audio Limiter ON.

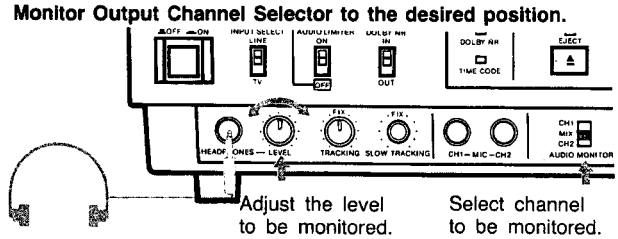


- Normally set the Audio Limiter Selector to the "ON" position during recording.

Note:
The Audio Limiter Selector controls both channels simultaneously.

Monitoring

If you wish to monitor the audio during recording, connect the headphone to the Headphones Socket and set the Audio Monitor Output Channel Selector to the desired position.

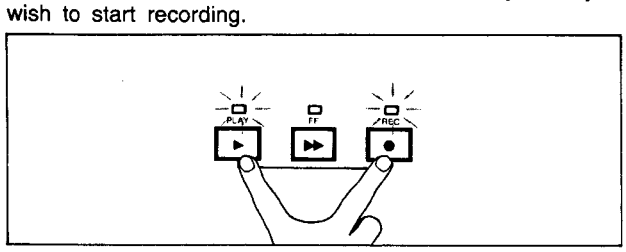


Setting of Audio Monitor Output Channel Selector	Headphones Socket
Channel 1	Audio from channel 1 only
MIX	(Not mixed) Each headphone hears separate channel. Channel 1... Left Channel 2... Right
Channel 2	Audio from channel 2 only

Note: When using the Audio Output Sockets CH1/CH2, audio signals are not affected by the Audio Monitor Output Channel Selector setting.

Recording

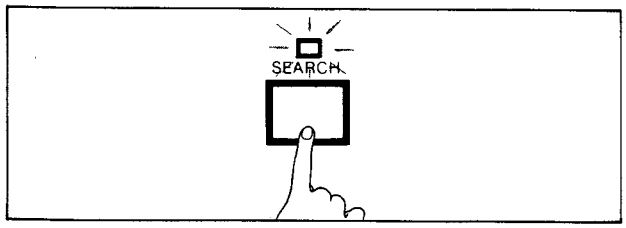
Press the Record and Play Buttons simultaneously when you wish to start recording.



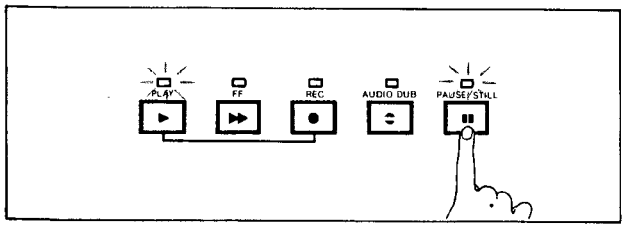
The recorder will go into the recording mode.

When the Pause Function is used:

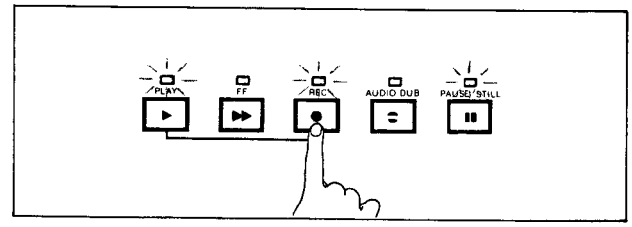
1) Press the Search Button and use search dial to locate a point where you wish to start recording.



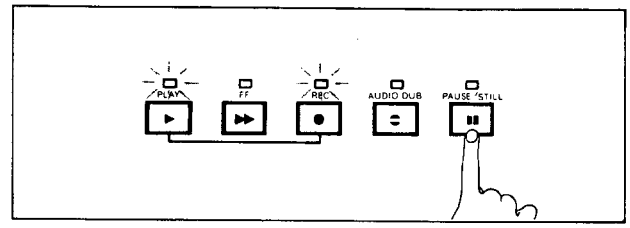
2) Press the Pause/Still Button or turn the search dial to still at this point.



3) Press the Record Button.



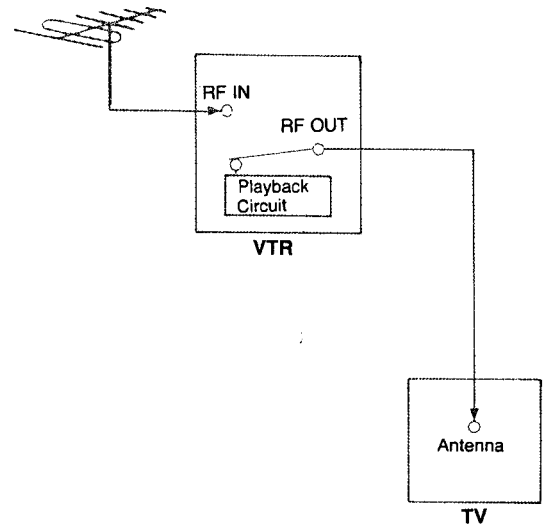
4) Press the Pause/Still Button once again to release the pause mode. Recording will start.



Notes:

- If the Audio CH2 Selector on the rear panel is set to the "TIME CODE" position, time code signals will be recorded or played back on through audio CH2.
- When the Auto Back Space Switch has been set to OFF, noise will appear at the paused portion during playback, but this is not a malfunction.

Playback



Playback through a Conventional TV Set

■ RF CONVERTER (Optional Accessory)

An RF converter (optional accessory) will allow you to playback VHS signals into your TV receiver. For this purpose those signals can be viewed through an unused broadcast channel.
If the playback picture shows a patterning interference effect, it may be that the RF converter playback channel requires careful adjustment.
Due to the delicate nature of this adjustment, it should be undertaken by your dealer.

Note:
Recording from RF IN is not possible.

Model AG-6200-E and -B

- The AG-6200 RF converter channel is preadjusted for your convenience to UHF approx. 36 Channel.

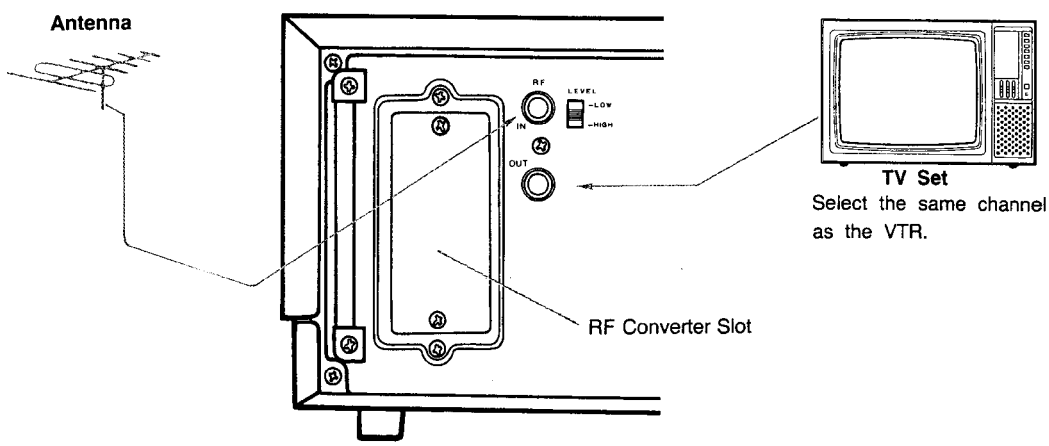
Model AG-6200-EN

- The AG-6200 RF converter channel is preadjusted for your convenience to VHF Channel 3(H).

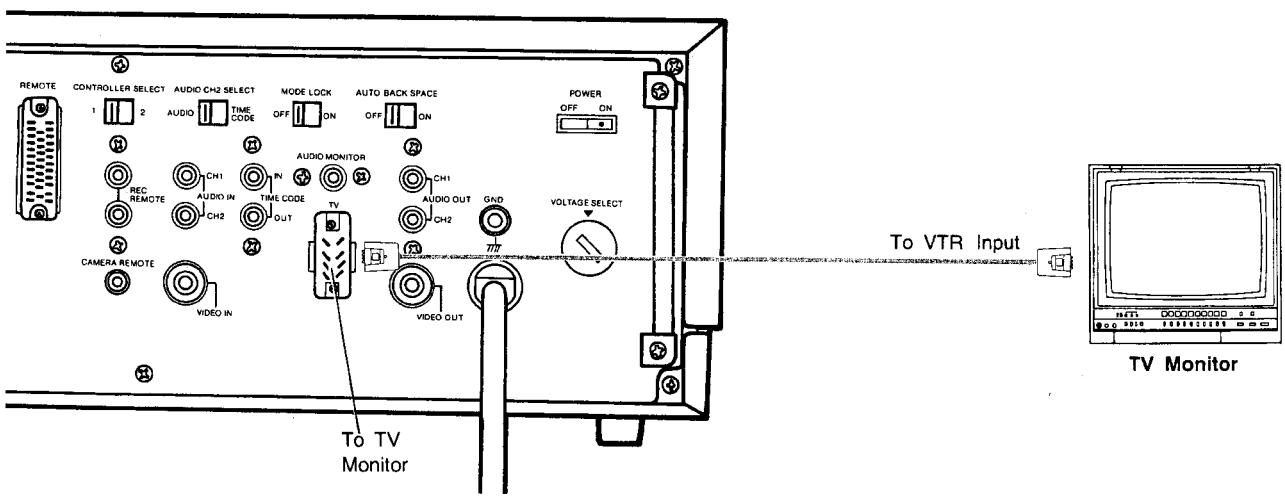
Model AG-6200-A

- The AG-6200 RF converter channel is preadjusted for your convenience to VHF Channel 1.

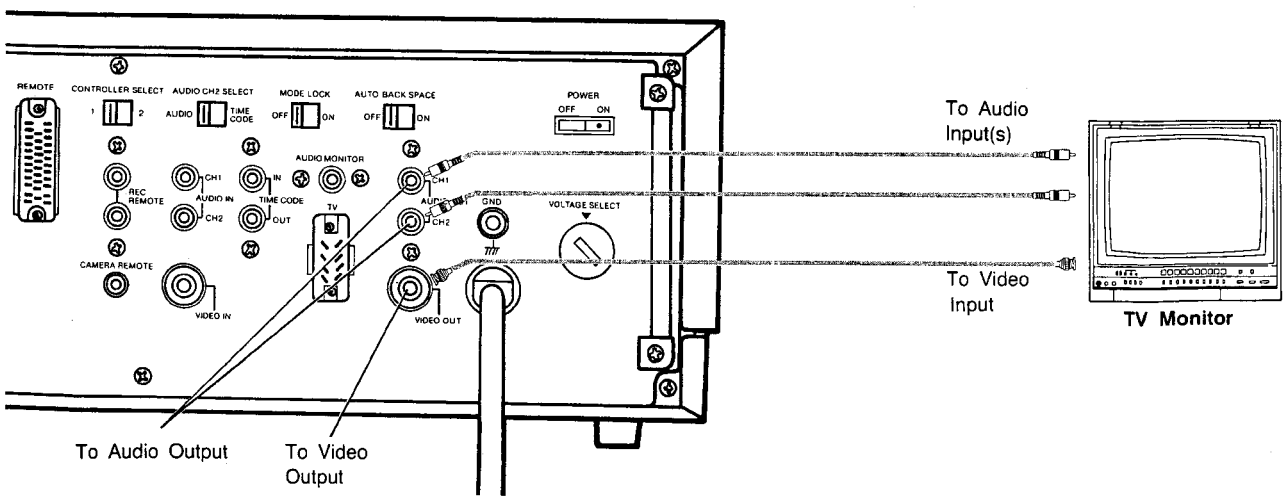
Confirm that the channel is not being used for TV braodcasts.Then set the TV channel to the same channel.



Using the VTR with a TV Monitor connected via TV/VTR Monitor Connection Cable (8-pin)



Using the VTR with a TV Monitor Connected via Audio/Video Cables

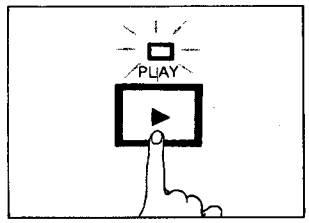


Switch Settings

VTR side	Conventional TV	Monitor TV
•Turn VTR ON. •Set the TIMER Selector to OFF. •Select the TV System Selector to the desired position. •**For AG-6200-EN or AG-6200-A models,** set the TV/VTR Selector to VTR and select RF channel. •Insert a recorded tape.	•Turn Power ON. •Select the same channel as the VTR.	•Turn Power ON. •Set the TV/VTR Selector to VTR.

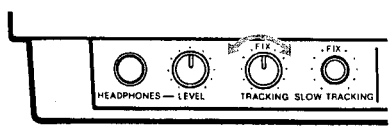
Normal Playback

Press Play Button to start playback.



When noise appears during normal playback, adjust the Tracking Control for a normal image.

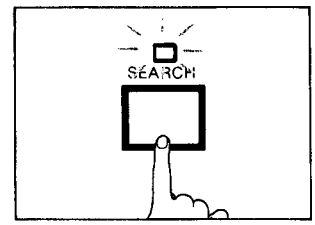
1) Turn the Tracking Control slowly in either direction until the picture is again clear.



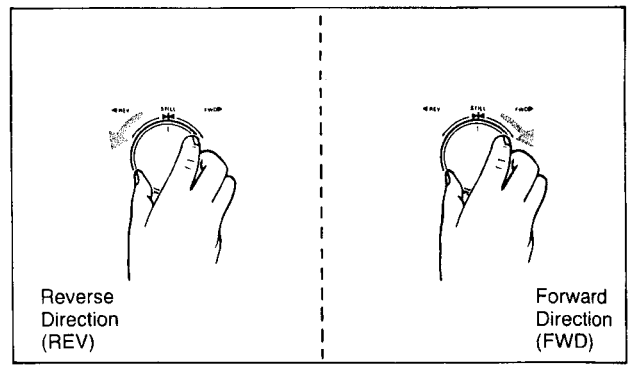
2) When playback is completed, turn the Tracking Control to the "FIX" position.
Note: TRACKING should be readjusted for every tape not made on this machine.

Search Operation

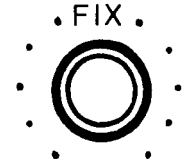
Press the Search Button.



Vary the tape speed by using the Search Dial.



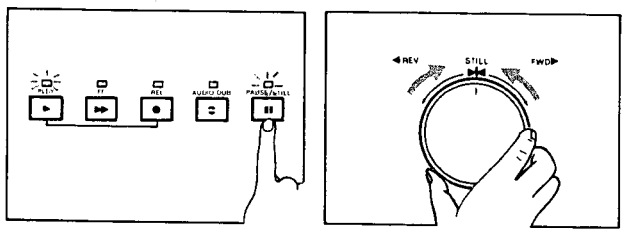
When noise appears during **slow-motion playback,** turn the Slow Tracking Control clockwise or counter-clockwise to reduce the noise.



SLOW TRACKING

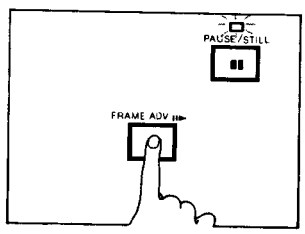
Still-Frame

When the Pause/Still Button is pressed during playback, or when the Search Dial is set to STILL position during search operation, the tape is temporarily stopped and a still picture will appear on the screen.



Frame Advance

Frame-by-frame advance is possible in the pause/still mode by pressing the ❚❚▶ Button.



When the ❚❚▶ Button is depressed and held down, picture will be played back at the 1/15 speed of the normal playback mode.

Note:

- If the tape recorded on other VHS type video recorder is played back, noise will appear on the still or search modes, but this is not a malfunction.

Automatic Pause/Still-Release Function

The Pause Mode is released after about 12 minutes in order to protect the video heads and/or the tape, and the VTR is set into the Stop Mode automatically.

Manual Pause/Still-Release

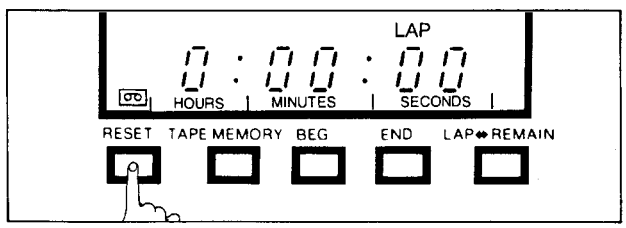
- Press the Pause/Still Button again or move the Search Dial in either directions to release the Pause/Still Mode (however, only during search operations.).
- Press the Play Button.

Counter

Counter function does not work with a tape on which the control (CTL) signal has not been recorded.

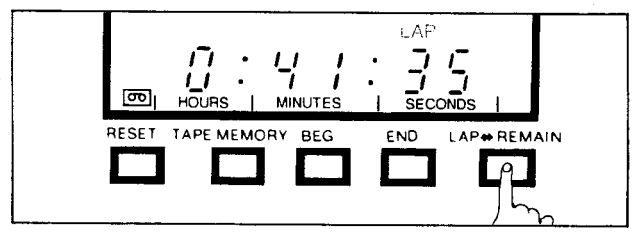
Counter Reset

Press the RESET Button.
Counter indicates 0:00:00 (reset point).



Normal Counter Display

Press the LAP ⇔ REMAIN Button in order to select the LAP position, and "LAP" indicator will illuminate.



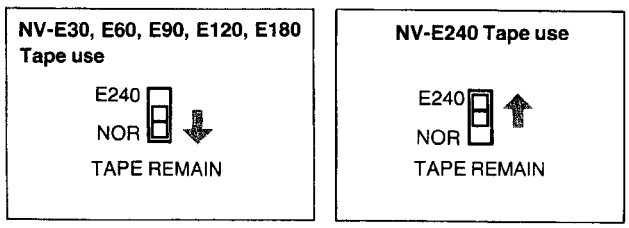
When the tape is transported, counter indicates the tape position from the reset point (0:00:00).

Tape Memory

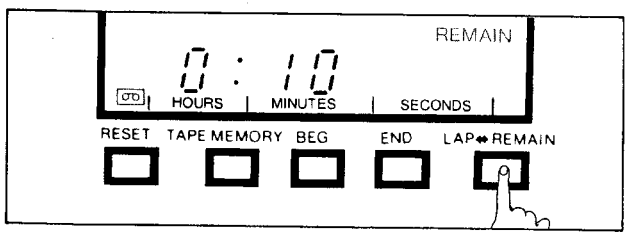
Tape memory can be used to automatically stop tape at "0:00:00", or repeat the playback of tape segment marked by places where the BEG and END Buttons were pressed.

Tape Remaining Time

When the NV-E30, E60, E90, E120, E180 tape is used:
Set the Tape Remaining Selector to "NOR".
When the NV-E240 tape is used:
Set the Tape Remaining Selector to "E240" position.
If this is not done the time remaining will be in error.



Press the LAP ↔ REMAIN Button in order to select the REMAIN position.
[oo] and "REMAIN" indicator will illuminate.



When the tape is being pulled, counter indicates the remaining tape time.

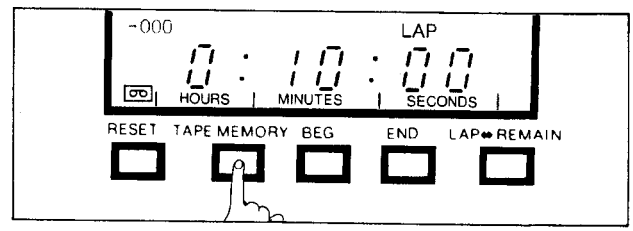
Notes:

- When the remaining tape amount becomes within about 5 minutes, the display " [oo] " will flash.
- When switched to the display showing remaining tape amount, "L" may be displayed by the tape counter. The display "L" calculates the remaining tape amount.
- Depending on the condition of the used tape, some deviation will occur in the display for the remaining tape amount.

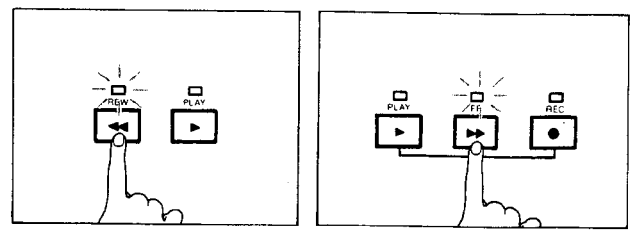
"0:00:00" Position Search

If there is a place during recording or playback to which you want to return in playback once again.

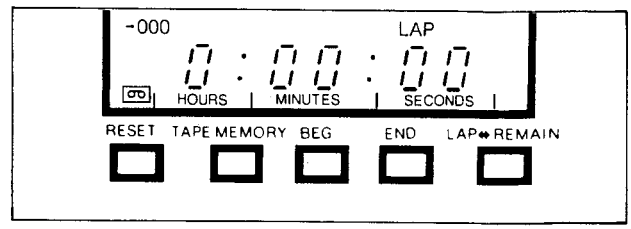
1) Press the RESET Button to set it to "0:00:00" at the selected instant.
2) Press the Tape Memory Button until the display "→000" of the tape counter is obtained.



3) Press the Rewind or Fast Forward Button after recording or playback has finished.



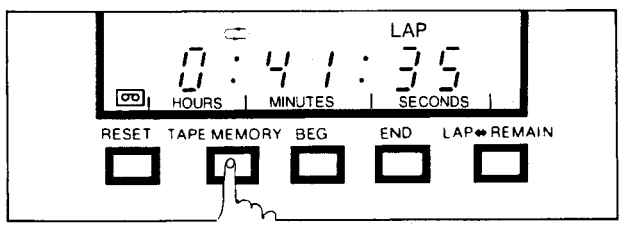
The tape will be rewound or fast forwarded to "0:00:00" position, and then stop.



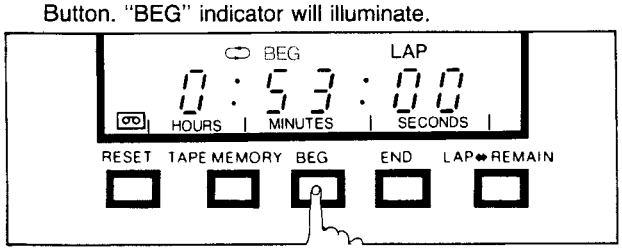
Normal Repeated Playback (Random Repeat)

If it is desired to watch a programme repeatedly, proceed as follows:

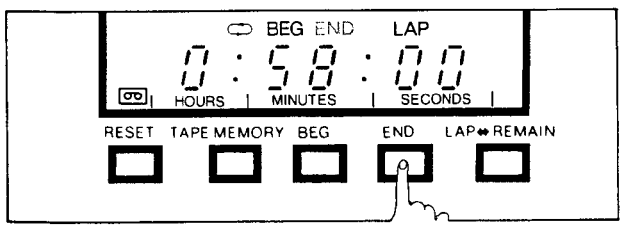
1) Press the Tape Memory Button until the display " ⊂⊃ " of the tape counter is obtained.



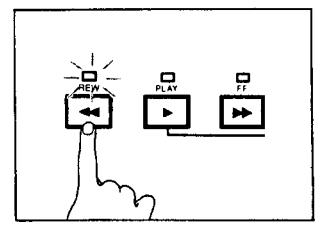
2) Locate the beginning position of section you wish to repeat playback by using search function and then press the BEG Button. "BEG" indicator will illuminate.



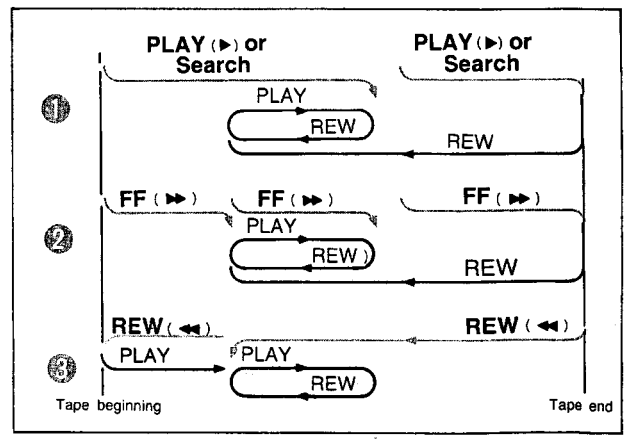
3) Locate the end position of section you wish to repeat playback by using search function and then press the END Button. "END" indicator will illuminate.



4) Press the Rewind Button to access the repeated playback. Tape will be rewound to the BEG position and the playback will start automatically.

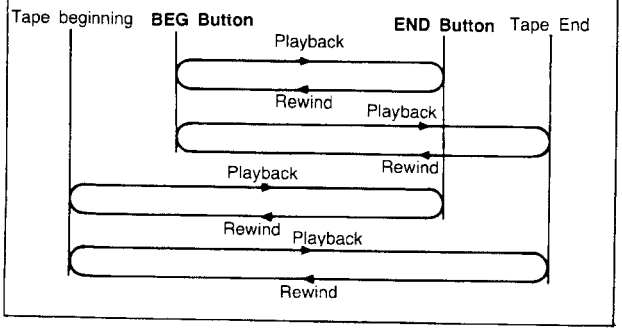


Depending on the point where the buttons Playback, Search, Rewind, and Fast Forward are pressed, the VTR will operate as follows.



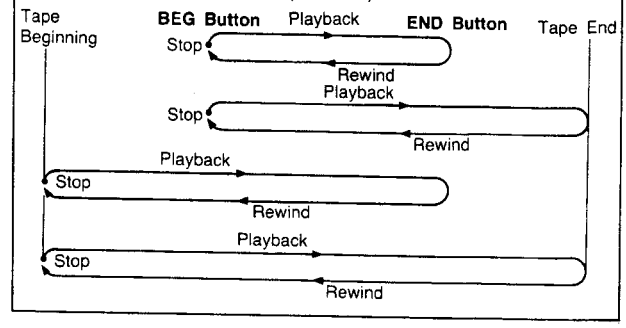
Repeated Playback System Configurations

The method for the repeat playback programme is as follows:



One-Time Repeated Playback

This is the function for one-time playback of a section. When the Play Button is pressed, the tape plays back the decided programme Rewind mode is entered after completion, and the tape will return to the Beginning Point of the programme where it will be at stand-by. (The VTR will be in the Stop mode.)



Repeated Playback without END point entered

When programme END position has not been entered, the tape will be played back repeatedly in between the place where the BEG Button is pressed and the end of tape.

Repeated Playback without BEG point entered

When programme BEG position has not been entered, tape will be played back repeatedly in between the beginning of tape and the place where the END Button was pressed.

Repeated Playback without both BEG and END points

When both programme BEG and END points have not been entered, playback will be repeated in between the beginning and end of tape.

Notes:

- When the BEG point and the END point are the same, or when the END point is smaller than the BEG point, the indicators "BEG" and "END" of the tape counter will flash.

- If repeat playback is continued many times, the playback picture may develop a gradual lag. On the average, the amount of lag per each playback is about one second. If the initial setting and the actual lag of the picture becomes large, perform setting once again.

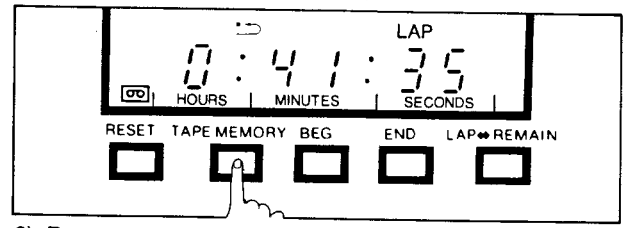
- When correcting the beginning point and end point for repeat playback, push the BEG button and the END button and perform entry once more. Also, when cancelling the beginning point and end point, turn off the "BEG" and "END" display.

Even when performing one-time playback, read the above notes in the same way.

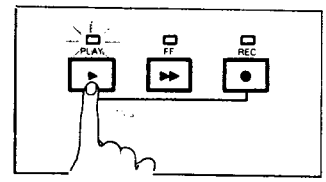
One-Time Playback

This one-time playback function will be used to play back the programme only once.

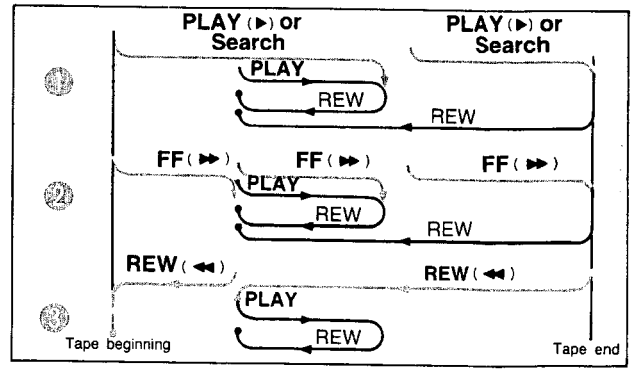
1) Press the Tape Memory Button until the indication " ⮌ " of the tape counter is obtained.



2) Repeat steps 2) and 3) described in the "Normal Repeated Playback" section.
3) Press the Play Button at the programme start point.



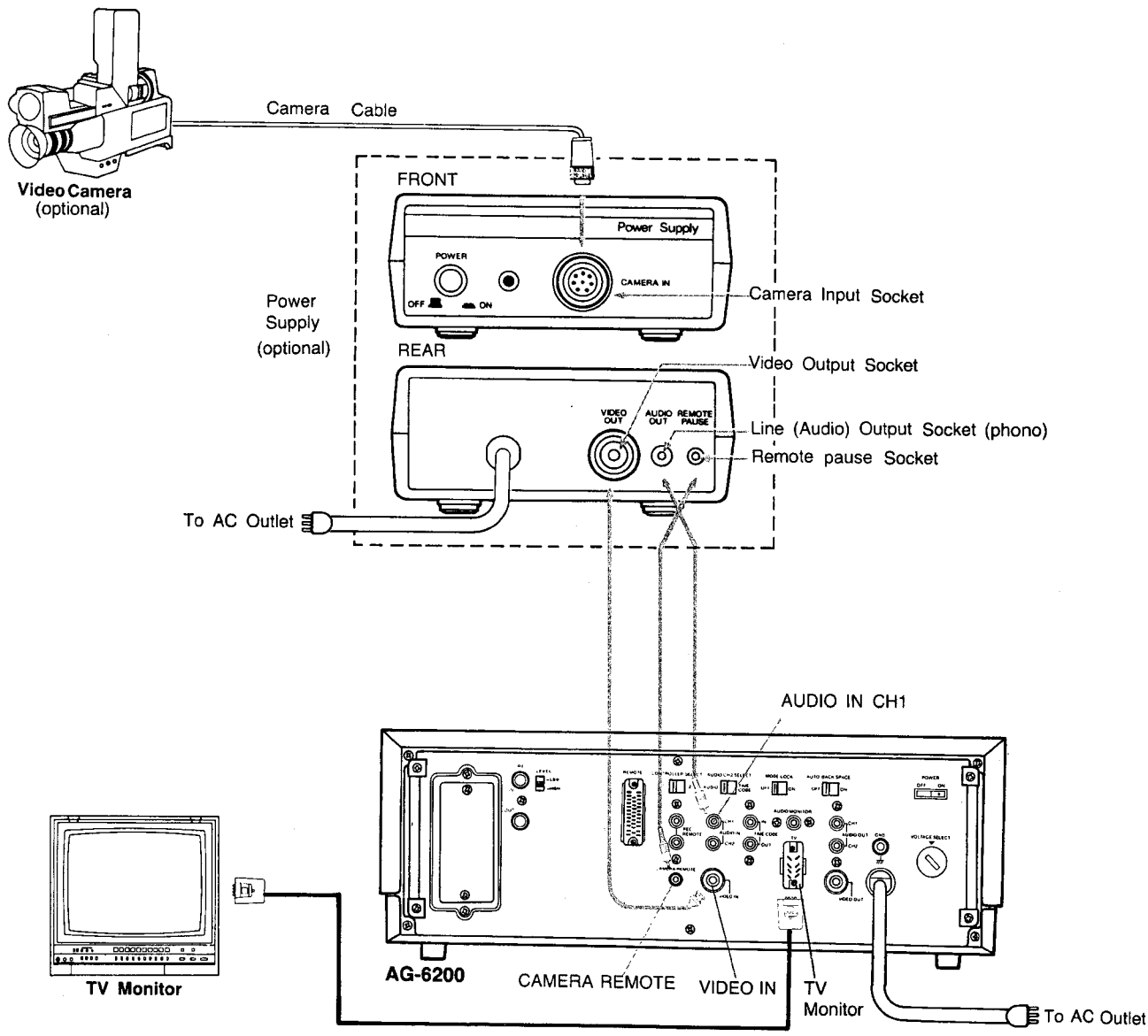
Playback starts and ends at the programme end position. The tape will be rewound to the programme start position at which time it will stop. The segment can be replayed by pressing the Play Button as long as the memory is in " ⮌ " mode.
Repeat above step 3).
Depending on the point where the buttons Playback, Search, Rewind, and Fast Forward are pressed, the VTR will operate as follows:



Camera Recording

The AG-6200 may be used with an optional video camera.
The connection diagram is shown below, but for best results, please refer to the operating instructions of your camera using.

Connections

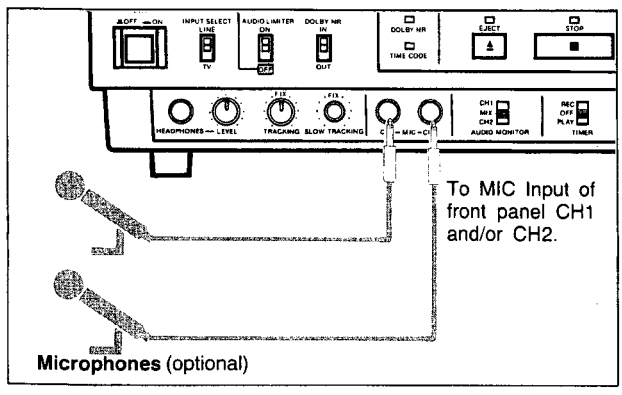


Switch Settings

- Turn TV Monitor ON.
- Select the TV System Selector to the desired position.
- Set the Input Selector to LINE.
- Set the Timer Selector to OFF.
- Insert a cassette. Make sure that the tab is in place.

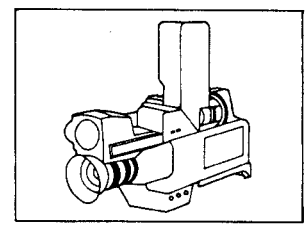
Sound Recording with Microphones

If you wish to record sound with microphones, connect the microphones to MIC Sockets (CH 1 and 2). If the microphone and the audio cable are connected at the same time, only the microphone sound will be recorded.

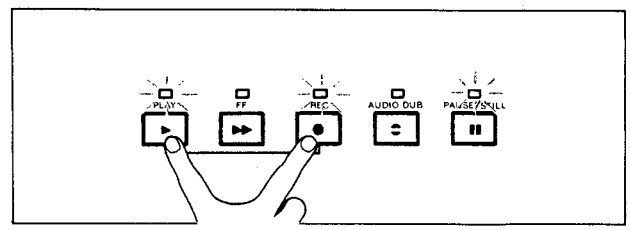


Operations

1) Make the necessary adjustments on the camera. Refer to the Operating Instructions of the camera you are using on how to handle the camera and how to start and stop comera recording.



2) Push Record Button together with the Play Button. The indicator lamps for REC, PLAY and PAUSE/STILL should light up. The unit will go into the standby mode.

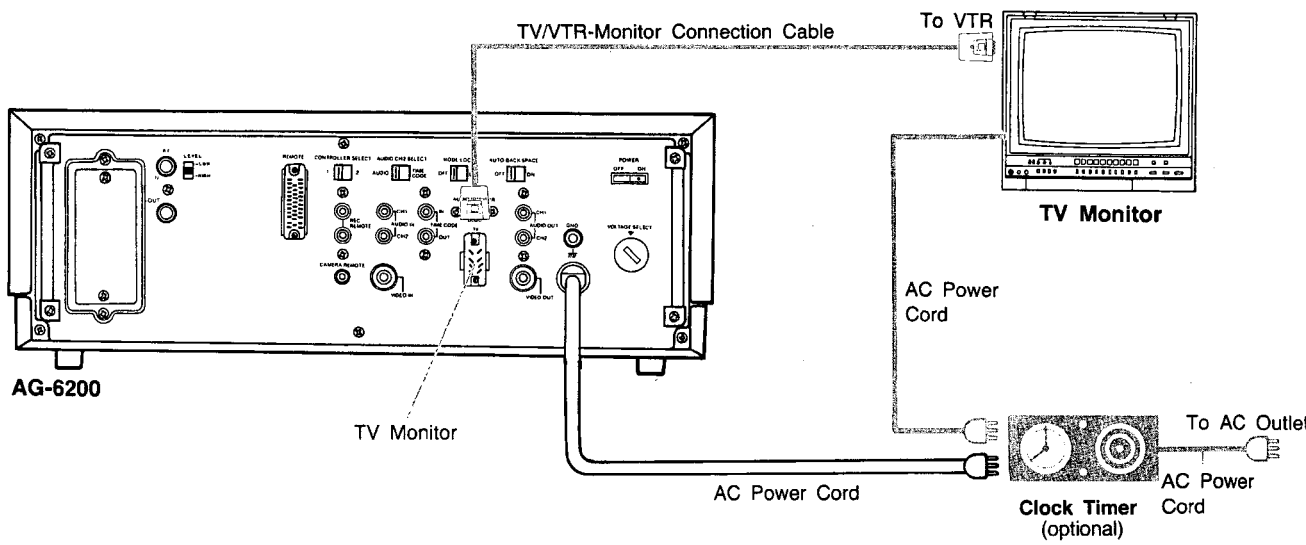


Audio Level Adjustment

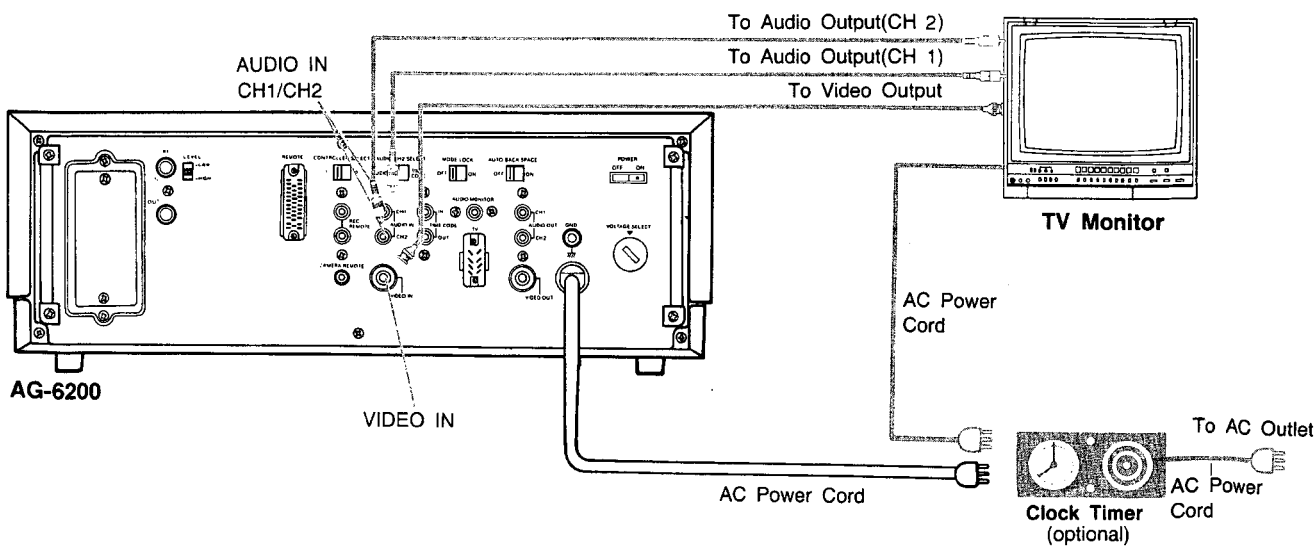
Adjust audio CH1 and/or CH2 recording level as described on page 12 section "Audio Level Adjustment".

Timer Recording/Playback

Timer Recording/Playback using a TV Monitor connected via TV/VTR Monitor Connection Cable (8-pin)

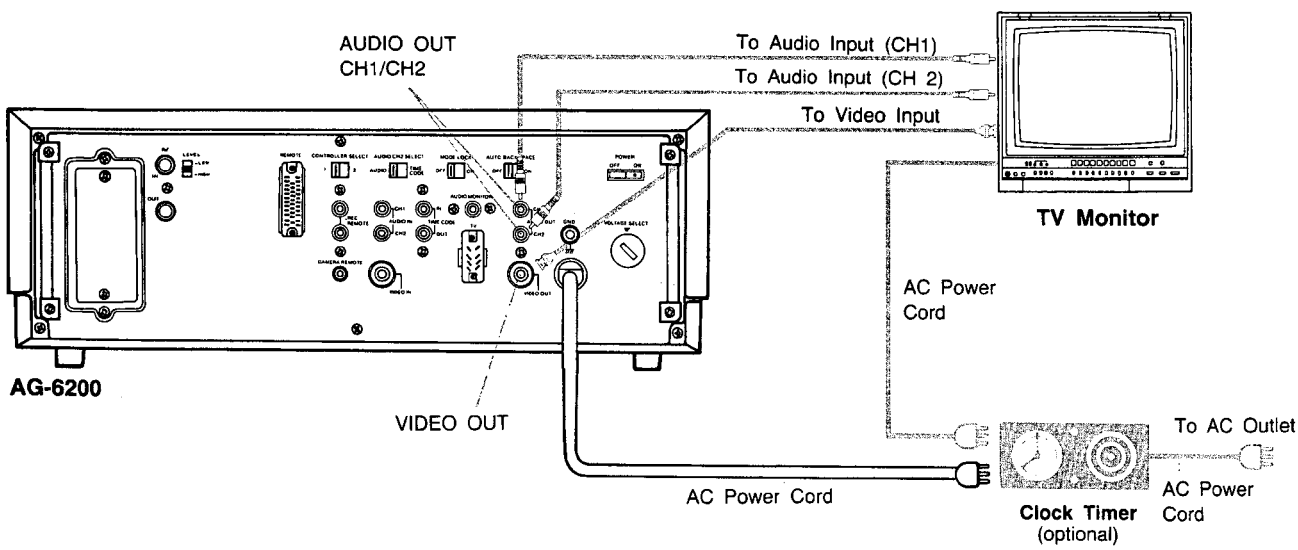


Timer Recording using a TV Monitor connected via Audio/Video Cables

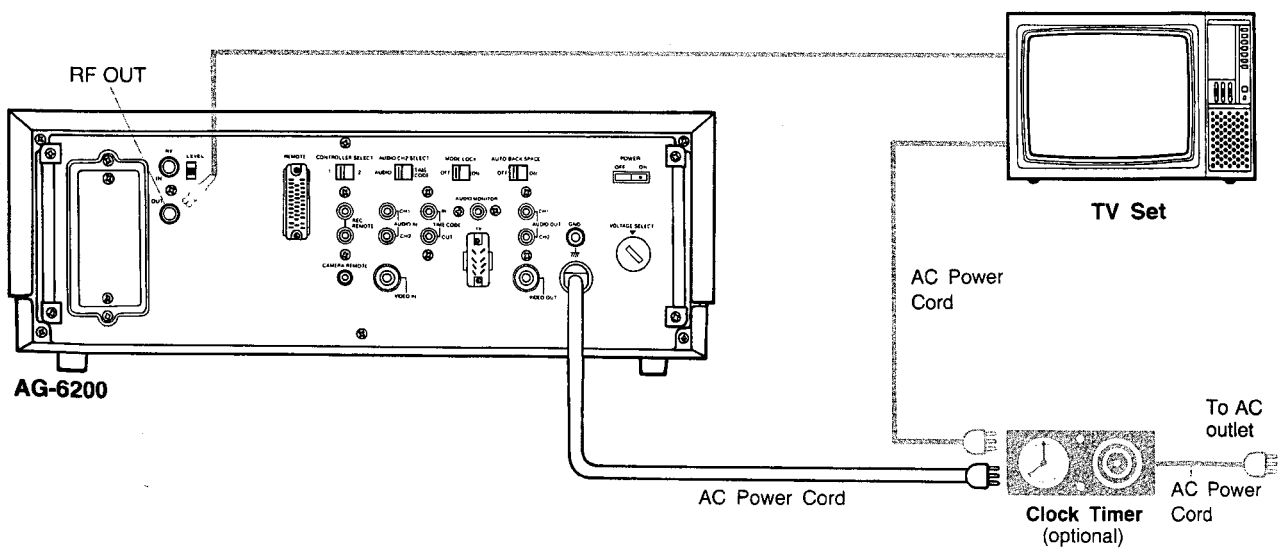


Timer Recording/Playback

Timer Playback using a TV Monitor connected via Audio/Video Cables



Timer Playback using a conventional TV Set



Switch Settings

- Turn VTR ON.
- Select the TV System Selector to the desired position.
- **For AG-6200-EN or AG-6200-A models,** set the TV/VTR Selector to VTR.
- Set the Timer Selector to REC or PLAY.
- Set the Input Signal Selector to the desired position (LINE or TV). See page 12.
- Insert a cassette tape. Make sure that the tab is in place.

Timer;
- Turn the Power ON.
- Set the timer to the desired time.
  (Refer to the operating instructions for the timer.)
  The timer should be purchased locally.

Conventional TV set or Monitor TV;
Refer to page 16 on switch setting.
Make sure the power is turned ON.

Adjustment of the audio level

Adjust audio CH1 and/or CH2 recording level as described on page 12 section "Audio Level Adjustment".

Note

It takes about one minute to load the tape inside the VTR. Therefore, set the timer pre-set time about one minute before the recording start time.

When the preset time comes:

At the pre-set time, the power will be automatically turned ON and the tape will start moving.
At the preset turn OFF time, the tape will remain loaded on the sylinder of the unit. See NOTE below.

When the tape reaches its end during recording, it will be unloaded and then the VTR will stop automatically.
When the tape reaches its end during playback, it will be rewound to the beginning and then VTR stops automatically.

To stop timer recording
If desired to stop the timer recording/playback, press the Stop Button.

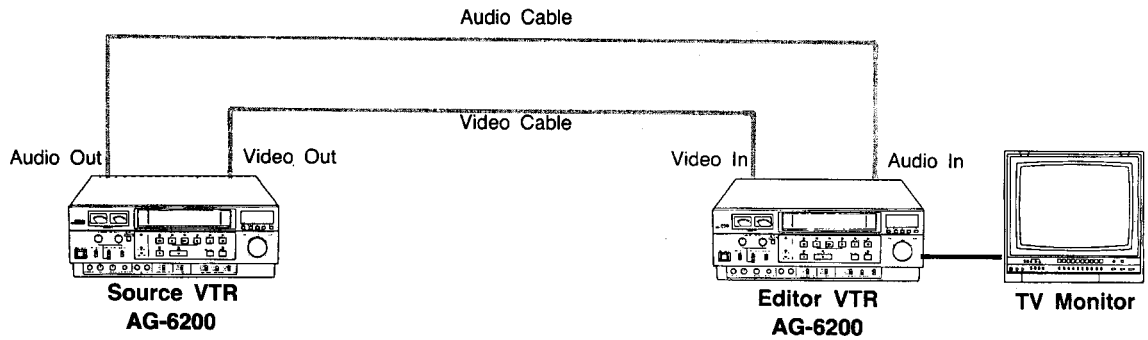
Note:
- If the power is turned OFF while the tape is moving during timer recording/playback, the tape will remain loaded. When the power is resumed, the tape will be unloaded and then the unit will go into the recording/playback mode. To protect the tape, be sure to set the Timer to turn OFF at a time which is about 10 minutes after the tape ends. If, for example, NV-E180 tape is used, the turn-off time should be set for about 190 minutes.

Dubbing

You are cautioned that copying and/or exchanging copyrighted television programming may be copyright infringement.

Connections

Connect as outlined below if you wish to use two video recorders to copy a tape:
Two AG-6200 VTR's can be used for duplicating tapes (dubbing).



Switch Settings

- Turn both units ON.
- Set Input Signal Selector on the recording machine to "LINE".
- Select the TV System Selector to the desired position.
- **For AG-6200-EN or AG-6200-A models**
  When monitoring the editor (recording) playback with a conventional TV Set, set the TV/VTR Selector to VTR.
  Turn the TV ON and select the same channel as the editor VTR. (See page 14.)
- Set the Timer Selector to OFF.
- Set the Input Selector to LINE.
- Insert a cassette tape. Make sure that the tab is in place on the editor VTR.

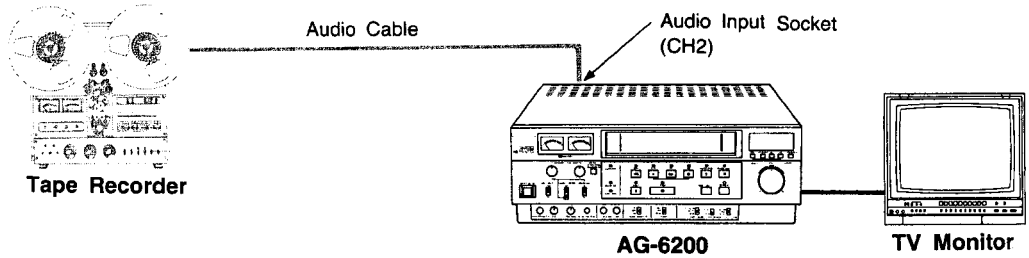
Operations

1) Place the recorded cassette in the playback machine and a blank cassette in the recording machine.
2) Push the Play Button on the playback machine.
   Adjust audio level controls on Editor VTR for desired audio recording level.
3) Push the Record Button together with the Play Button to set the recording machine.
4) Push the Stop Button to stop the dubbing.

Audio Dubbing

Your own soundtrack may be substituted onto a previously recorded tape by using either a microphone, or the output of a tape recorder. This unit can be made to dub on audio channel 2.

Connections



Connection with Microphone

If the microphone and audio cable are connected at the same time, only microphone sound will be recorded.

Switch Settings

- Turn the VTR ON.
- Set Input Signal Selector to "LINE".
- Select the TV System Selector to the desired position.
- Insert a cassette. Make sure that the tab is in place.
- **For AG-6200-EN or AG-6200-A models**
  When monitoring with a conventional TV Set, set the TV/VTR Selector to VTR.
- Turn the TV ON
- Set the Timer Selector to OFF.

Operations

1) Locate the tape segment where you wish to start audio dubbing by using the Search Dial.
2) Turn the Search Dial to the Still Mode.
3) Press the Audio Dub and Play buttons at the same time.
   The audio dubbing will start.

When searching for the segment to be dubbed.

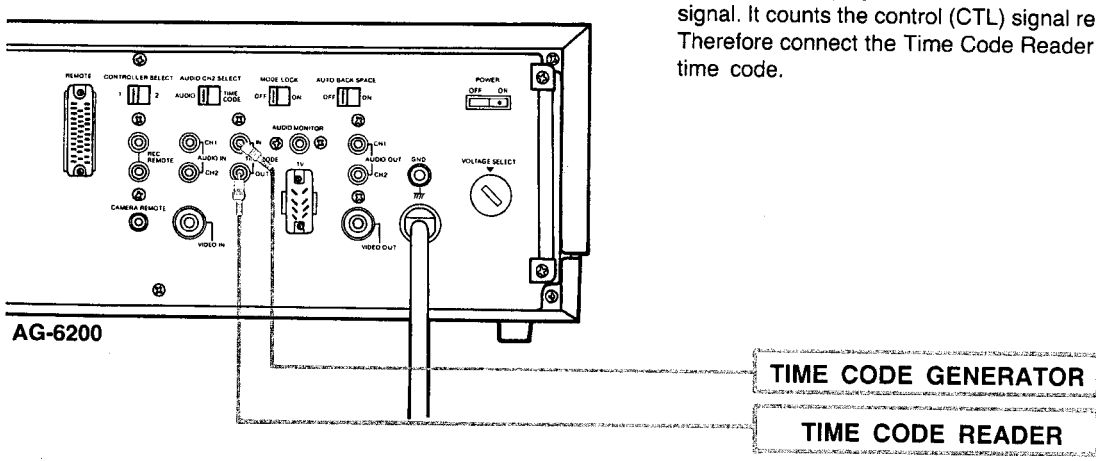
1. Make the search speed constant.
2. Press the Pause/Still Button to activate the Still Mode.
3. When advancing a little more...
   Release Still mode by pressing the Pause/Still Button once again.

Repeat steps 1–3 until the desired segment is located.

Time Code

In order to record the EBU TIME CODE signal, connect the EBU time code generator to the Time Code Input Socket during recording, and select "TIME CODE" on the Audio CH 2 Selector. Then time code signal will be recorded on audio CH 2 track.

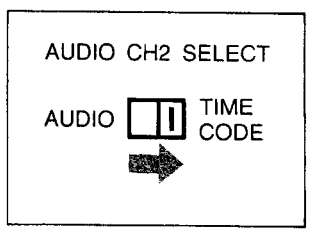
Connections



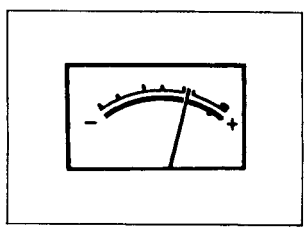
Note:
The counter display on the VTR does not count the time code signal. It counts the control (CTL) signal recorded on the tape. Therefore connect the Time Code Reader in order to read the time code.

Operations

1) Set Audio CH2 Selector to the "TIME CODE" position.



2) When the Time Code Signal is connected, Audio CH2 Meter indicates 0 dB.



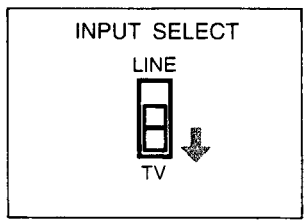
Time code signals may be recorded during the normal recording or dubbing (including audio dubbing) modes. For details, refer to the Operating Instructions of your time code generator/reader.

Operating Hints

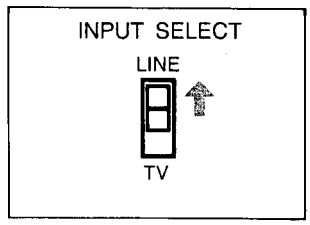
Input Signal Selector

The Input Signal Selector is used to select the source of audio and video inputs.

TV:
To record audio and video signals from a TV monitor via the TV Monitor Socket (8-pin), set the Input Signal Selector to "TV" position.



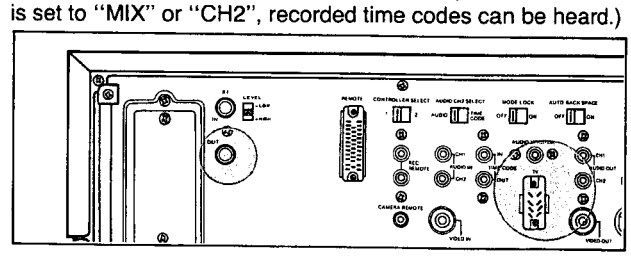
LINE:
To record audio and video signals from an Audio/Video source through the Video Input Socket (BNC) and Audio Input Socket (phono), set the Input Signal Selector to "LINE" position.

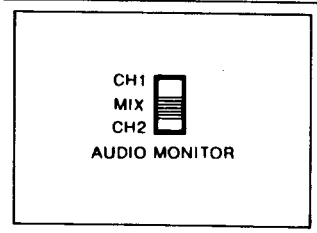


Audio Monitor Output Channel Selector

This is to select the audio channel 1, channel 2 or both channels for monitoring through Audio Monitor Output Socket, TV Monitor Socket, or RF Output Socket.
The audio monitoring level can be adjusted on the TV.
When monitoring through the Headphones Socket, see page 13.

Note:
When the Audio CH2 Selector on the rear panel is set to "TIME CODE", switch this switch to "CH1". (When the switch is set to "MIX" or "CH2", recorded time codes can be heard.)





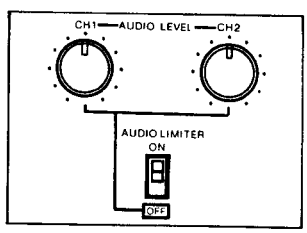
Setting of Audio Monitor Output Channel Selector	• TV Monitor Socket • Audio Monitor Output Socket • RF Output Socket
CH1	Audio from channel 1 only
MIX	Sound from both channels is mixed.
CH2	Audio from channel 2 only

Note:
When using the Audio Output Sockets CH1/CH2, audio signals are not affected by the Audio Monitor Output Channel Selector setting.

Audio Limiter Selector

ON:
To minimize distortion at peak levels set the Audio Limiter Selector to "ON" position. This permits the average level to be set higher for better signal to noise ratio.

OFF:
This permits maximum dynamic range to be recorded, but the level must be set low enough so that peaks do not cause objectionable distortion.

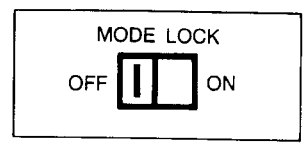


Notes:
- The Audio Limiter Selector controls both channels simultaneously.
- When howling is caused by increasing the volume, set the sound volume of the monitor TV to a lower setting.
- After adjusting to an appropriate level, turn the Audio Limiter to ON.

Mode Lock Switch

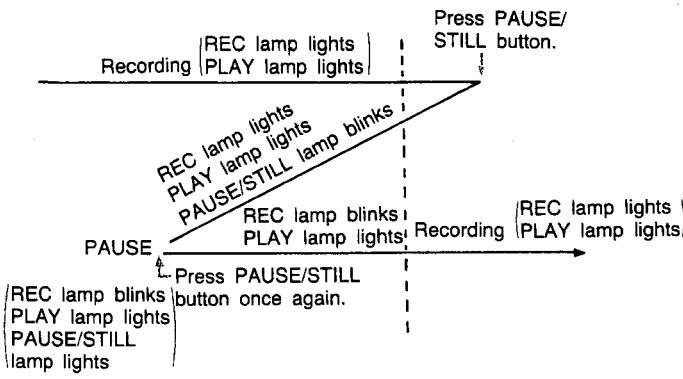
When this switch is set "ON", operation button (i.e., Record, Play, Rewind, Fast Forward etc.) on the front panel will be inactive even if these buttons are pressed.

Note:
When the remote controller (or editing controller) is connected to this unit, operation on the remote controller side can be performed even if the Mode Lock Switch is set to ON. After using, turn the Mode Lock Switch to OFF.



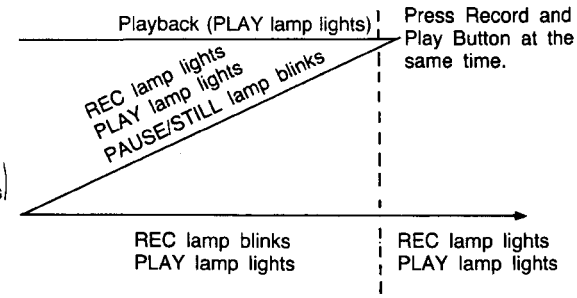
When Auto Back Space Switch is in the "ON"position

■ When the PAUSE/STILL button is pressed during recording, the button's lamp will light or blink in the folllowing way:



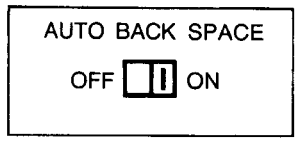
Caution: During reverse playback or normal playback, playback picture cannot be seen on the TV monitor, because the input signal is being output.

■ When the Record and Play Buttons are pressed together, the button's lamp will light or blink in the following way:

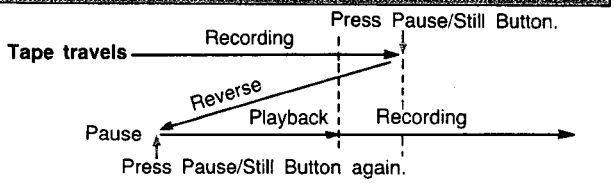


Automatic Back Space Mechanism

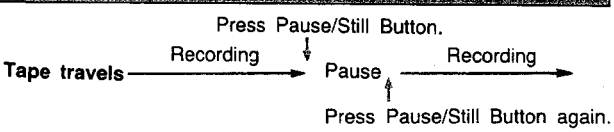
This Auto Back Space Switch is a very convenient function for use with video cameras which has remote pause.
The automatic backspace function is operational when the switch is set to the ON position. When the Pause/Still Button is pushed during recording, the tape is rewound slightly and set to the pause mode. When the Pause/Still Button is released, recording is made over the previous signals while the tape advances.



When the Auto Back Space Switch has been set to ON



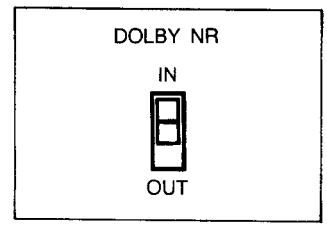
When the Auto Back Space Switch has been set to OFF



Note:
When the Auto Back Space Switch has been set to OFF, noise will appear at the paused portion during playback, but this is not a malfunction.

Dolby NR System

When the Dolby NR Switch is set to IN position during recording or playback, the Dolby NR Lamp lights. The Dolby NR System is activated, and the sound with less noise is recorded or played back.
Refer to the table below for Dolby NR Switch applications.



During playback / During recording	Dolby NR Switch IN	Dolby NR Switch OUT
Dolby NR Switch IN	Normal Sound (Less noise)	Treble is emphasized
Dolby NR Switch OUT	Treble is attenuated	Normal Sound

Note:
During playback of NTSC 4.43 MHz signal, Dolby NR System does not function.

Other Selectable Functions

This unit includes the following selectable functions (internal jumper wires selectable):
For details, please consult your service personnel.

1. Auto Rewind at End of Tape Function

At the time of shipping, the automatic rewind function has been set to the ON position, but it can also be set inside to the OFF position.

2. Auto Rewind at Tape Insert Function

Automatic selectable function rewinds tape to its starting point whenever a cassette tape is inserted (this function can be set ON/OFF). At the time of shipping, this function has been set to OFF.

3. Direct Search Function

This function allows the performance of direct search operation without pressing the search button. At the time of shipping, this function has been set to OFF.

4. Auto Repeat Back-Up Function ON/OFF

By setting the preset switches, the following 5 modes may be selected:

(1) Back-Up Function OFF

(2) Full Repeat Playback (Note 1)

When primary power is turned ON, the unit automatically selects the full repeat mode (see page 20). When used together with timer play (see pages 24–26), automatic full repeat can be performed when the primary power turns ON.

(3) Full One-Time Repeat (Note 2)

When the primary power is turned ON, the unit automatically selects the ONE-TIME mode (see page 21).

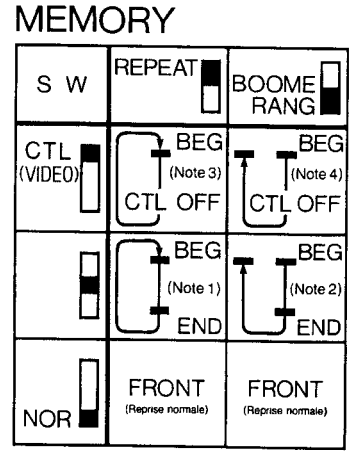
(4) CTL Pulse Detection Repeat Playback (Note 3)

When the primary power is turned ON, the unit automatically performs repeat playback from the beginning of the tape to the point at which the control pulse is interrupted. When used in combination with timer play (see pages 24–26), repeat playback from the tape's beginning to the interruption of the control pulse can be performed automatically when the primary power is turned ON.

(5) CTL Pulse Detection ONE-TIME Playback (Note 4)

In this mode, when the primary power is turned ON, the unit enters the ONE-TIME repeat mode in which the tape is automatically played back from beginning to the interruption of the control pulse.

Note: When presetting the CTL pulse detection repeat playback mode, or the CTL detection ONE-TIME playback mode, the BEG and END buttons cannot be used.



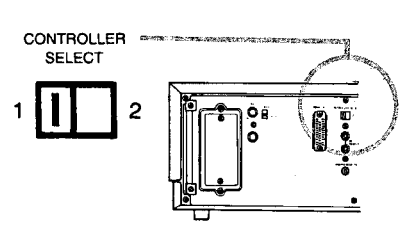
5. Record Remote Function (Refer to page 35)

With the On/Off Remote Switch to OFF during recording, the following kinds of function are possible with Record Remote Socket:

- During recording, the VTR is automatically stopped.
- During recording, the VTR automatically stops on Pause/Still.
- During recording, the tape is automatically rewound to its beginning, the unit stops, and the cassette tape is automatically ejected.
- During recording, the tape is automatically stopped and then cassette tape is automatically ejected.

Controller (optional)

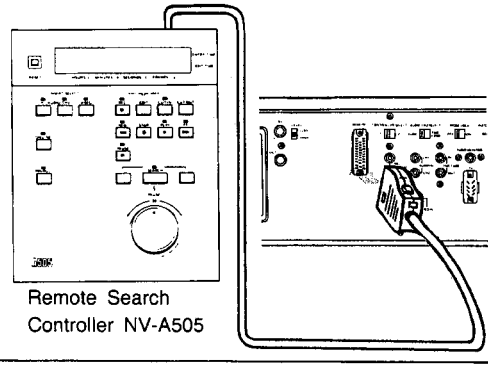
When using a controller, set the Controller Selector to the appropriate position.



CONTROLLER SELECT	
1	NV-A500 NV-A505 AG-A600
2	NV-A960 NV-A800A NV-A850A

Remote Search Controller NV-A505

The unit's functions can be controlled from a distance when the NV-A505 optional Remote Search Controller is connected to the unit's Remote Control Socket.



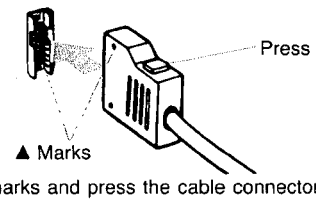
Remote control functions of recording, playback, fast forward, rewind, pause, frame advance, variable tape speed playback (0~10 times normal tape speed), reverse playback (½~10 times normal tape speed) and stop. Operation is still possible with the unit's function buttons even when the Remote Search Controller NV-A505 is connected to the unit.

Note:

Insert Button (CH 1, CH 2, VIDEO), Frame Reverse, Edit/Cut Out Buttons cannot be used with this VTR.

The Cut In Button is for audio dubbing over a previously recorded audio portion (the Cut In Button and the Play Button are pressed simultaneously).

When connecting to the remote socket



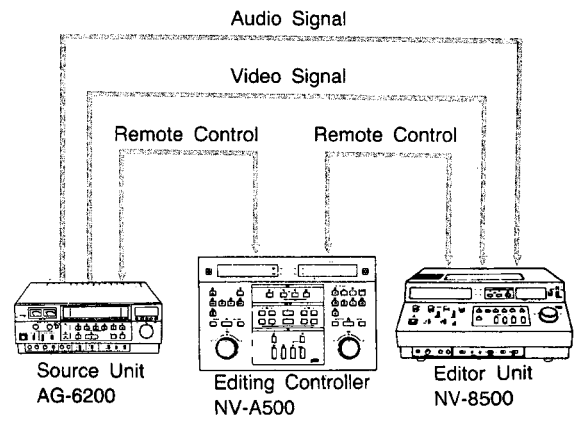
Align the "▲" marks and press the cable connector button to connect or disconnect.

For details, read the Operating Instructions of the NV-A505.

Editing Controller NV-A500/ NV-A960

The AG-6200 may be used as a source player in an editing system.

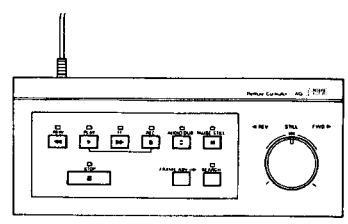
This is the basic system for dubbing between a source unit and an editor unit when one source unit, one editor unit and the editing controller are used together.



For details, read the Operating Instructions of the editing controller.

Remote Controller AG-A600

Using optional Remote Controller, you can operate the AG-6200 about 3 meters away from the VTR.



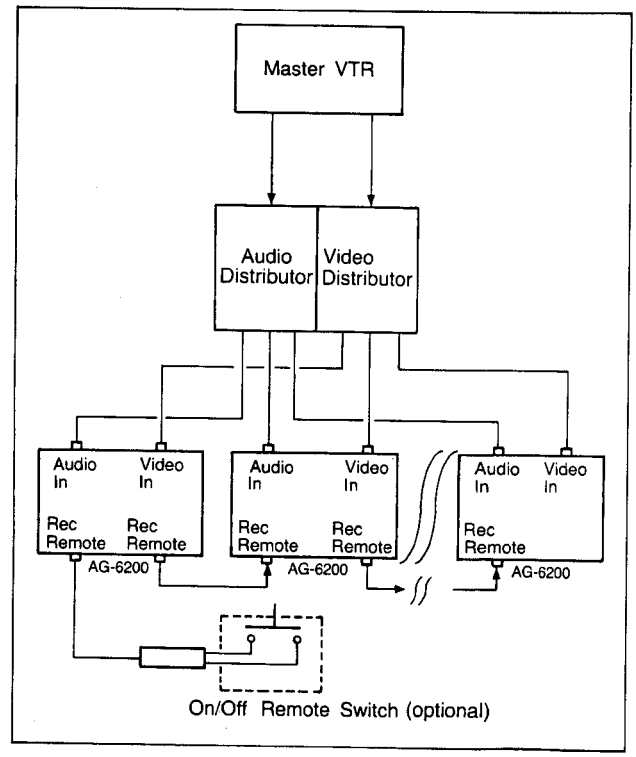
Remote

Camera Remote Socket

When this is connected to a video camera which has a pause function, remote pause of VTR can be accomplished from the video camera.

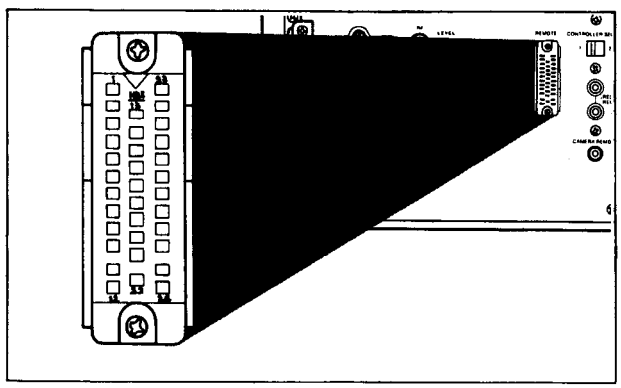
Record Remote Socket

This socket is used to dub or edit the master VTR's tape to two or more slave VTRs (Maximum 500 units) at the same time.



Interconnections

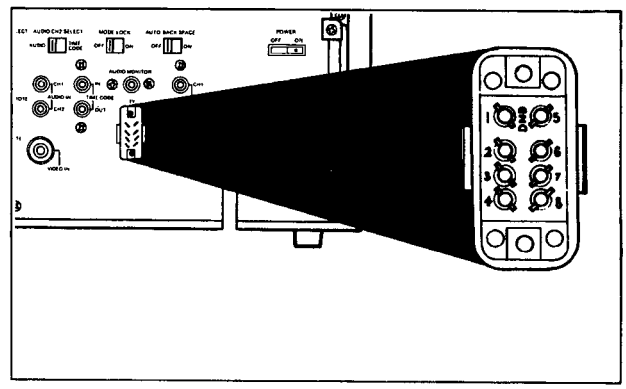
Remote Socket



Pin. No.	Contents	Pin No.	Contents
1	REC SWITCH*	18	CONTROL PULSE OUT
2	PLAY SWITCH	19	REMOTE 19
3	FF SWITCH	20	START MARK
4	REW SWITCH	21	EJECT SWITCH
5	STOP SWITCH	22	
6	AUDIO DUB SWITCH	23	REC HOLD
7	PAUSE SWITCH	24	PLAY HOLD
8	CASSETTE IN	25	FF HOLD
9	AUDIO DUB SWITCH	26	REW HOLD
10	FF, REW SLOW DOWN	27	
11		28	AUDIO DUB HOLD
12	GND	29	PAUSE HOLD
13	FRAME ADV. SWITCH	30	REMOTE 30
14	REVERSE COUNT	31	AUDIO DUB HOLD
15		32	
16	EDIT SWITCH	33	REMOTE 33
17	REVERSE	34	+12 V

***Note:** When the voltage on the pin is LOW, the unit will go into the REC mode.

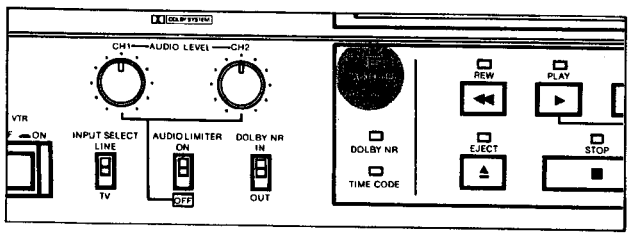
TV Monitor Socket



Pin No.	Contents	Pin No.	Contents
1	AUDIO OUT	5	AUDIO OUT GND
2	VIDEO OUT	6	VIDEO OUT GND
3	VIDEO IN GND	7	AUDIO IN GND
4	VIDEO IN	8	AUDIO IN

Maintenance Notes

Auto Off Lamp



The unit comes with a moisture detection circuit which is activated when the power is ON and some condensation or moisture is formed inside the unit.

When the Auto Off Lamp lights:

This indicates that moisture has formed inside the unit which then ceases to operate. The cassette tape will be ejected automatically. Keep the unit powered and wait until the lamp goes off. (Although a great deal depends on the ambient circumstances, the lamp will go off in a few hours' time at the longest.)

Moisture is formed under the same principle that condensation will form on window panels in a heated room, and it may be evident in the following circumstances:

in from a cold location.

—In a room where the heater has been switched on in the winter.

—In a room where there is a high level of moisture or steam.

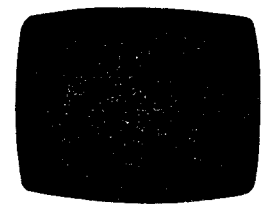
—In a warm room where the video recorder has been brought in from a cold location.

When the Auto Off Lamp blinks:

This means that something is wrong with the cylinder motor or photosensor. If the lamp still blinks when the power is switched off and on again, the unit requires servicing.

Video Head Clogging

Good Picture



Snowy Picture

The video heads are the means by which the recorder places pictures on the tape during recording, and reads pictures from the tape during playback.

In the unlikely even that they become dirty enough to be clogged, no picture will be recorded or played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy). If this is the case, have the recorder checked by qualified service personnel.

Cleaning the VTR

Wipe the VTR with a clean, dry cloth. Never use cleaning fluids, chemicals or wax.

Keep water away

Keep the VTR away from flower vases, tubs, sinks, etc.

CAUTION: If liquids should be spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR consult qualified service personnel.

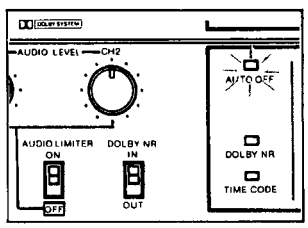
- Do not insert fingers or any other objects into the video cassette holder.
- Avoid operating or leaving the unit near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the unit in an excessively hot, cold, or damp environment as this may result in damage both to the recorder and to the tape.
- Do not spray any cleaner or wax directly on the unit.
- If the unit is not going to be used for a length of time, profect it from dirt and dust by using the dust cover.
- Do not leave a cassette in the recorder when not in use.
- Do not block the ventilation slots on the top of the unit.
- Use this unit horizontally and do not place anything on the top panel.
- Cassette tape can be used only for one-side, one direction recording. Two-way or two-track recordings cannot be made.
- Cassette tape can be used for either Colour or Black & White recording.
- Do not attempt to disassemble the recorder. There are no user serviceable parts inside.
- If any liquid spills inside the recorder, have the recorder examined for possible damage.
- Refer any needed servicing to qualified service personnel.

Trouble Shooting

...Check the following points once again.

First Check Points

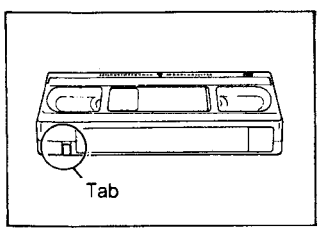
- Is the AC power cord connected?
- Is the Auto Off Lamp on?
  See page 37.



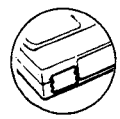
- Are the connections correct?
- Have all the switches been set properly?
  See pages 30~33 "Operating Hints".

If no operation starts when either the Record or Audio Dubbing Button is pressed.

- Is the Mode Lock Selector on the rear panel set to "OFF"?
- Is the small tab on the back of the tape still intact?



When the tab has been broken off



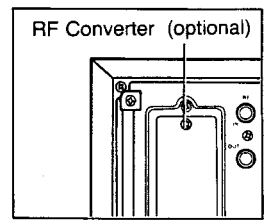
Cover the hole with adhesive tape.

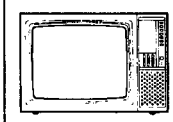
No change in counter display

The control (CTL) signal has not been recorded onto the tape. The counter will not change unless this signal is recorded.

When using with a conventional TV Set

- Is the channel setting of the TV Set the same as the VTR?





Turn TV on and select the same channel as the VTR.
See page 14.

If the tape remaining time is not correct

- Is the Tape Remaining Selector set to correct position?
  See page 19.
- Is the Lap ◄► Remain Button set to the "REMAIN" position?

The cassette tape cannot be inserted or removed

Are the VTR and Power Switches set to "ON"?

Record (or playback) mode is obtained when the Power is turned ON.

Is the Timer Selector set to "OFF"?

If the playback image is completely distorted

If the playback image is periodically completely distorted, check the following items:

1. Are radio interference or changes of power voltage occuring during recording?
2. Is horizontal hold control of TV monitor set correctly?
3. Is the cassette tape defective?

Refer servicing to qualified service personnel.

The Video Cassette

Types of Cassette Tape

Type	Playing Time
NV-E240	4 hrs.
NV-E180	3 hrs.
NV-E120	2 hrs.
NV-E90	1.5 hrs.
NV-E60	1 hr.
NV-E30	30 minutes

In addition to the tapes specified above, the recorder will accept any cassette tape which has the VHS mark.

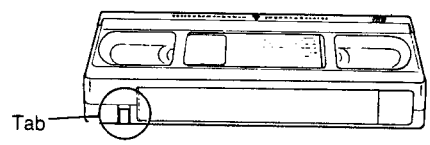
Notes for Video Cassette Use

Both the video cassettes and tapes are made with high precision.
Be sure to observe the following points:

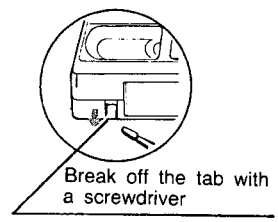
- Do not subject the tape to unnecessary movement. Do not insert and eject the video cassette over and over again, because this may result in tape looseness or scratches on the tape.
- Never try to disassemble the cassette or splice the tape.
- Do not open the cassette, touch the tape, or put anything inside the cassette.
- Note that video recordings are made across the entire width of the tape and, therefore, two-way recordings cannot be made.
- To prevent accidental damage to the tape and recorder caused by moisture from condensation, make sure that the video cassette is kept at room temperature for at least 1 hour before being used.
  Use of a cold cassette in a warm recorder could result in the formation of moisture or dew on the tape, which might damage the tape or the recorder.

Accidental Erasure Prevention

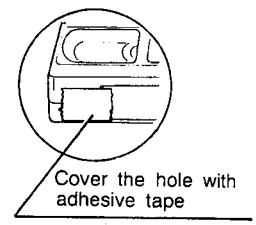
To prevent accidental erasure of recorded material, the VHS cassette has a removable tab on the rear side.
The tab can be broken off by a small screwdriver. After it has been removed, the tape can be used for playback only.
To record on a cassette from which the tab has been removed, simply cover the hole with a piece of adhesive tape.



To prevent accidental erasure



To record again



Video Cassette Storage

Always put the cassette back in its case before storage. Store in a vertical position.
Keep in a cool, dry place. Avoid storage in direct sunlight or near sources of heat. Do not place a recorded cassette in a magnetic field, such as that produced by an electric motor or power transformer... the magnetic field might accidentally erase the tape.
Do not drop or otherwise subject the cassette to shock impact.
For best results, store the cassette with the tape fully rewound. If the tape has been rewound unevenly, rewind it again to pack the tape properly.

- *The tape in a VHS cassette should not be spliced. Do not attempt to repair or open the cassette.
- *Do not touch the tape surface itself. Dirt and oil from your skin may deteriorate the tape coating.

Specifications

Power Source: 110, 120, 220, 240 V AC, 50-60 Hz
Power Consumption: Approx. 60 watts
Television System: CCIR: 625 lines, 50 fields, PAL colour signal
EIA: 525 lines, 60 fields, M-NTSC colour signal (Use TV monitor for playback of NTSC-recorded cassette tape.)

Video Recording System: 2 rotary heads, helical scanning system
Luminance : FM azimuth recording
Colour signal: converted subcarrier phase shift recording

Audio Track: 2 tracks
Tape Format: Tape width at 12.7 mm, high density tape

Tape Speed: PAL: 23.39 mm/sec (Normal)
M-NTSC: 33.35 mm/sec (Normal)

Record/Playback Time: PAL: 180 min. with NV-E180
M-NTSC: 120 min. with NV-T120
(Playback only)

FF/REW Time: Less than 4.5 min. with NV-E180

Input Level: Video: TV Monitor (8 pins)
1.0 Vp-p, 75Ω unbalanced
VIDEO IN (BNC)
1.0 Vp-p, 75Ω unbalanced
Audio: TV Monitor (8 pins)
−20 dB, 47 kΩ unbalanced
MIC IN×2
−73 dB, 4.7 kΩ unbalanced
LINE IN (phono)×2
−20 dB, 47 kΩ unbalanced

Output Level: Video: TV Monitor (8 pins)
1.0 Vp-p, 75Ω unbalanced
VIDEO OUT (BNC)
1.0 Vp-p, 75Ω unbalanced
Audio: TV Monitor (8 pins)
0 dB, 600Ω unbalanced
LINE OUT (phono)×2
−6 dB, 600Ω unbalanced
AUDIO MONITOR OUT (phono)
0 dB, 600 Ω unbalanced
HEADPHONES
−20 dB~−60 dB, 8 Ω
RF Modulated: AG-6200-A;
VHF channel 0 or 1
75 Ω unbalanced

Video Horizontal Resolution (on monoscope test pattern): Colour: more than 240 lines
B/W: more than 300 lines

Audio Frequency Response: 50~10,000 Hz

Signal-to-Noise Ratio: Video: better than 43 dB
(Rohde & Schwarz noise meter))
Audio: better than 50 dB
(Dolby NR IN)

Operating Temperature: 5°C~40°C
Operating Humidity: 35%~80%
Weight: 13.0 kg
Dimensions: 430 (W)×392 (D)×158 (H) mm

Accessory Supplied: 1 pc. Dust cover

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

*Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.